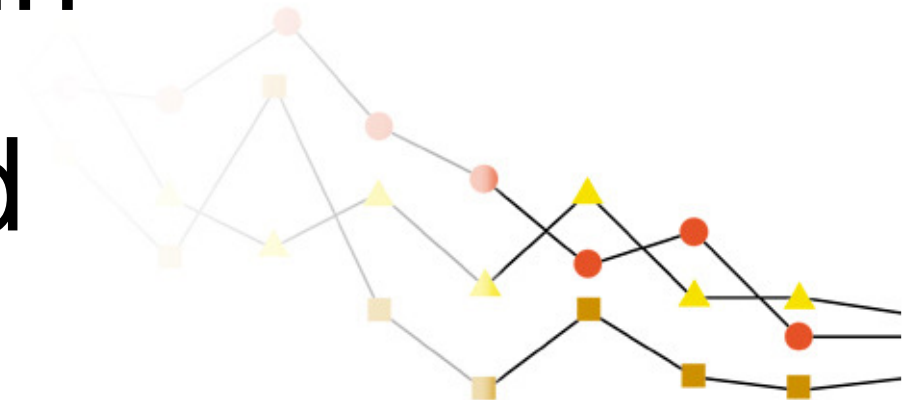


I nternational
S tudy of
A sthma and
A llergies in
C hildhood

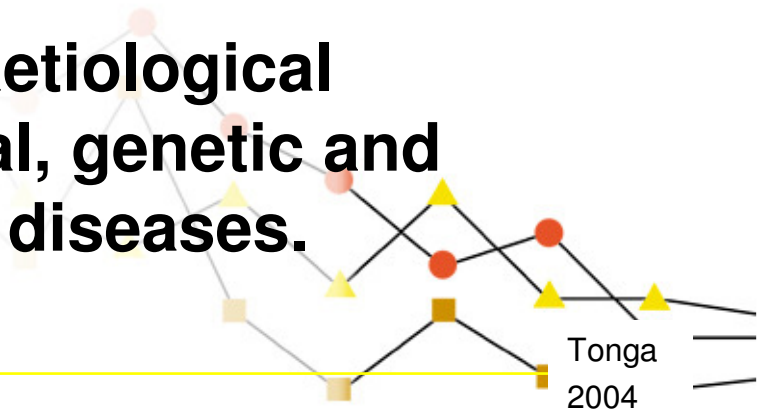


ISAAC Objectives

- 1. To describe the prevalence and severity of asthma, rhinitis and eczema in children living in different centres and to make comparisons within and between countries.**
- 2. To obtain baseline measure for assessment of future trends in the prevalence and severity of these diseases.**
- 3. To provide a framework for further aetiological research into lifestyle, environmental, genetic and medical care factors affecting these diseases.**



ISAAC



The three phases of ISAAC (so far!)

- I International survey of the prevalence and severity of asthma, rhinitis, and eczema in childhood
- II Studies of aetiologic factors, including skin tests for atopy, lung function and bronchial reactivity, serum IgE levels, physical examination, genetic markers, aeroallergens at home, and clinical management
- III Repetition of Phase I after at least 5 years to determine trends in these diseases

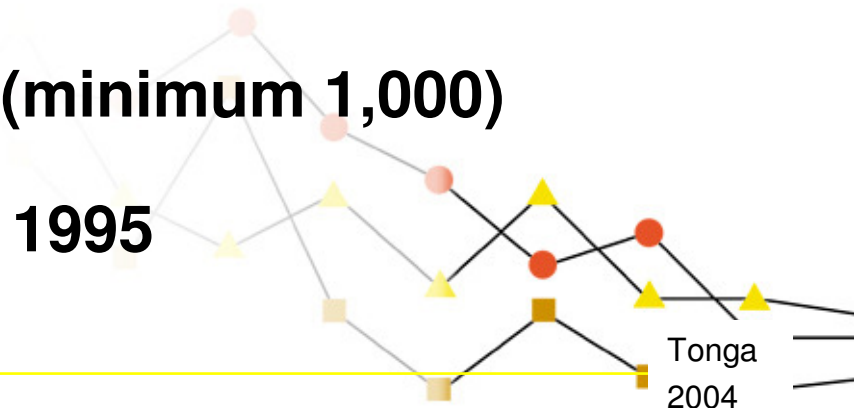


ISAAC



Phase One methods

- Design:** Multicentre prevalence studies
Identical methods (but translated questions)
- Study areas:** Largely recruited by personal contacts but differing in lifestyle and environment
- Population:** 13-14 year old school children (core)
6-7 year olds (strongly recommended)
- Sample size:** 3,000 children ideally (minimum 1,000)
- Study period:** July 1992 - December 1995



Phase One “core” instruments

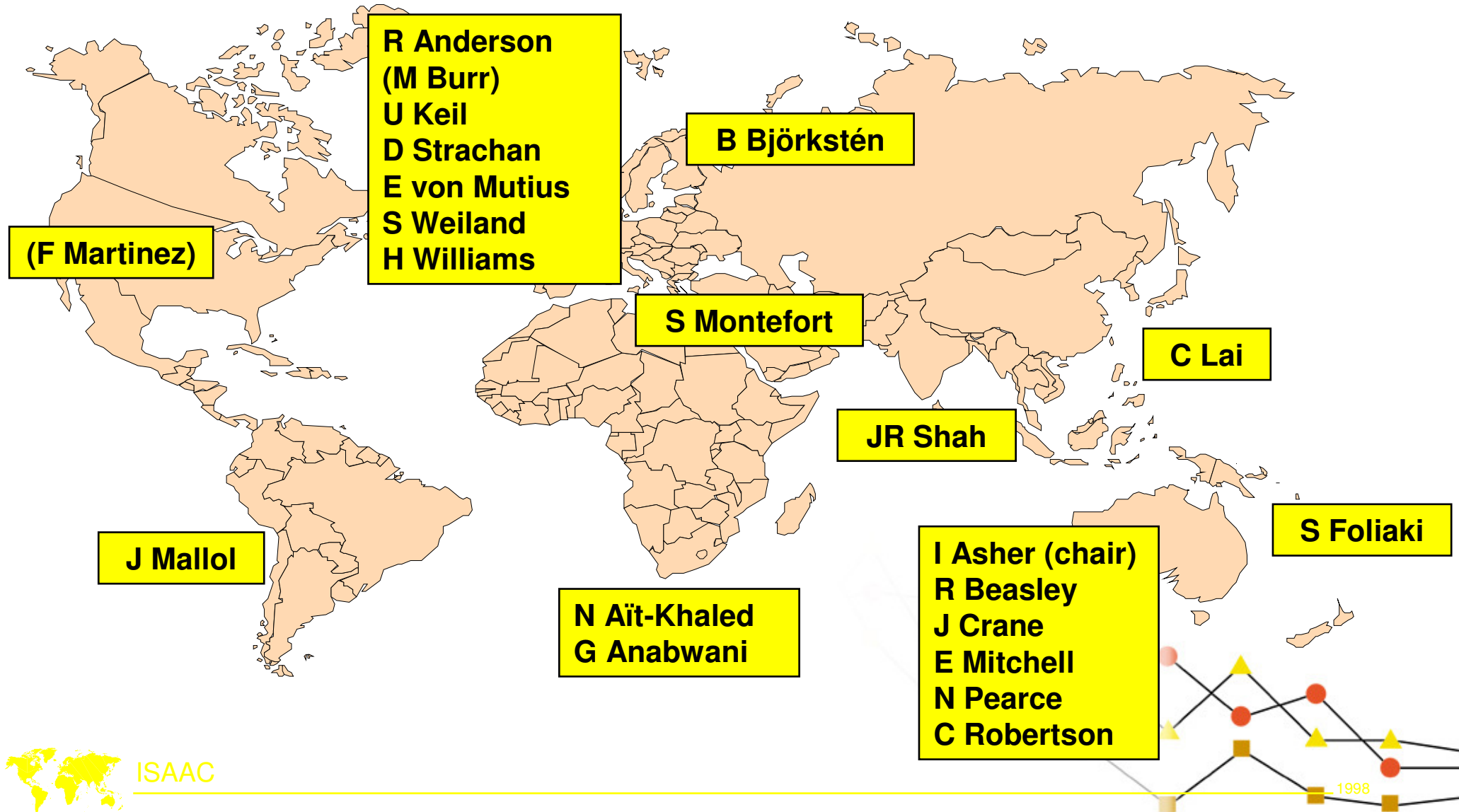
- written questionnaires on the prevalence and severity of asthma, rhinitis, and eczema for self-completion in 13 - 14 yr olds (*compulsory*)
- video questionnaire on the prevalence and severity of asthma for self-completion by 13 - 14 yr olds (*recommended*)
- written questionnaires on the prevalence and severity of asthma, rhinitis, and eczema for completion by parents of 6 - 7 yr olds (*recommended*)



ISAAC



ISAAC Steering Committee



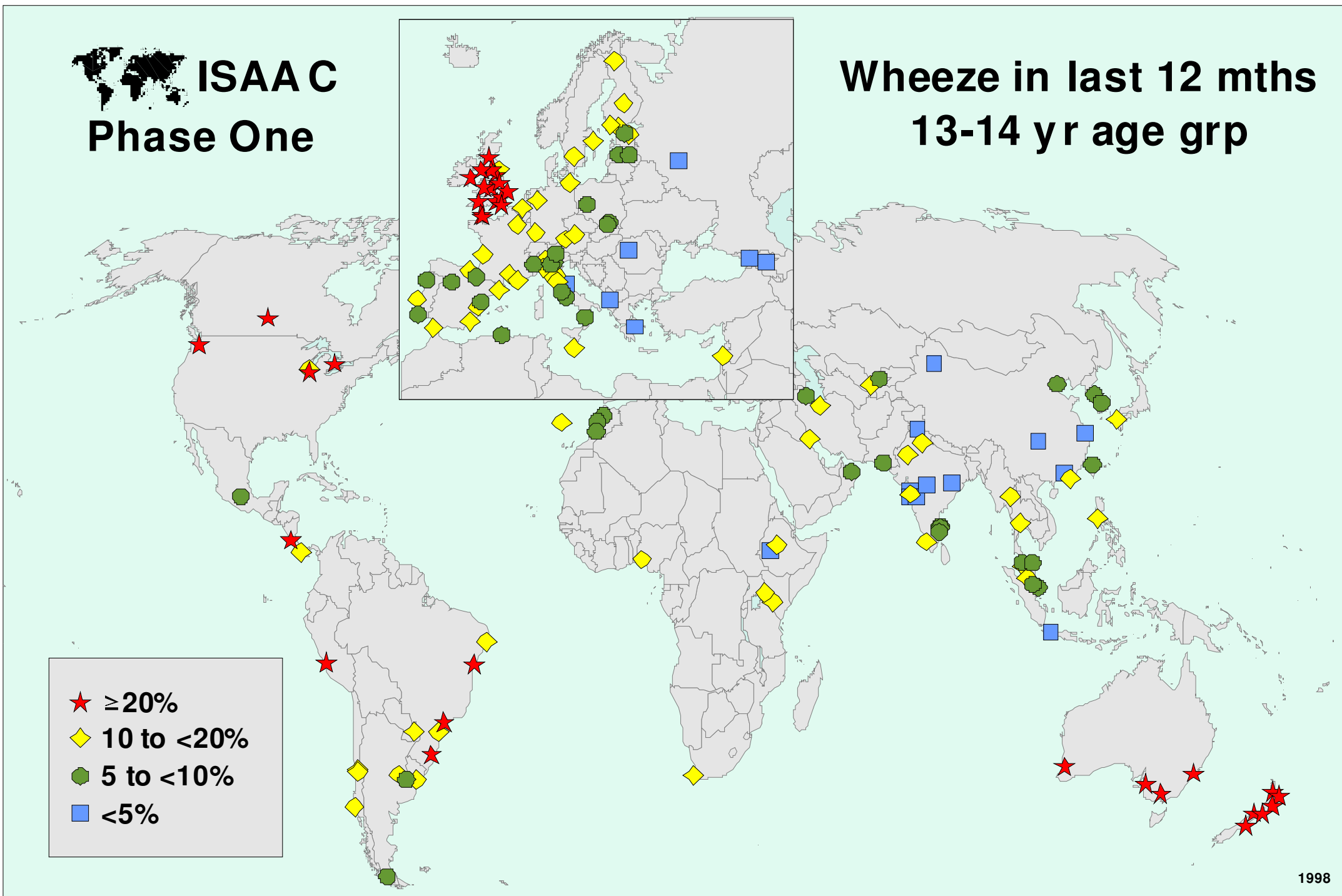
Study Centres and Participants: Phase I 13-14 Year Age Group

Region	Centre n	Participants n	Participation %
Africa	7	21,648	91%
Asia-Pacific	20	83,826	94%
Eastern Mediterranean	10	28,468	93%
Latin America	17	52,549	93%
North America	5	12,460	79%
Northern and Eastern Europe	20	60,819	93%
Oceania	10	31,301	93%
Southeast Asia	14	37,171	95%
Western Europe	52	135,559	90%
Global Total:	155	463,801	92%

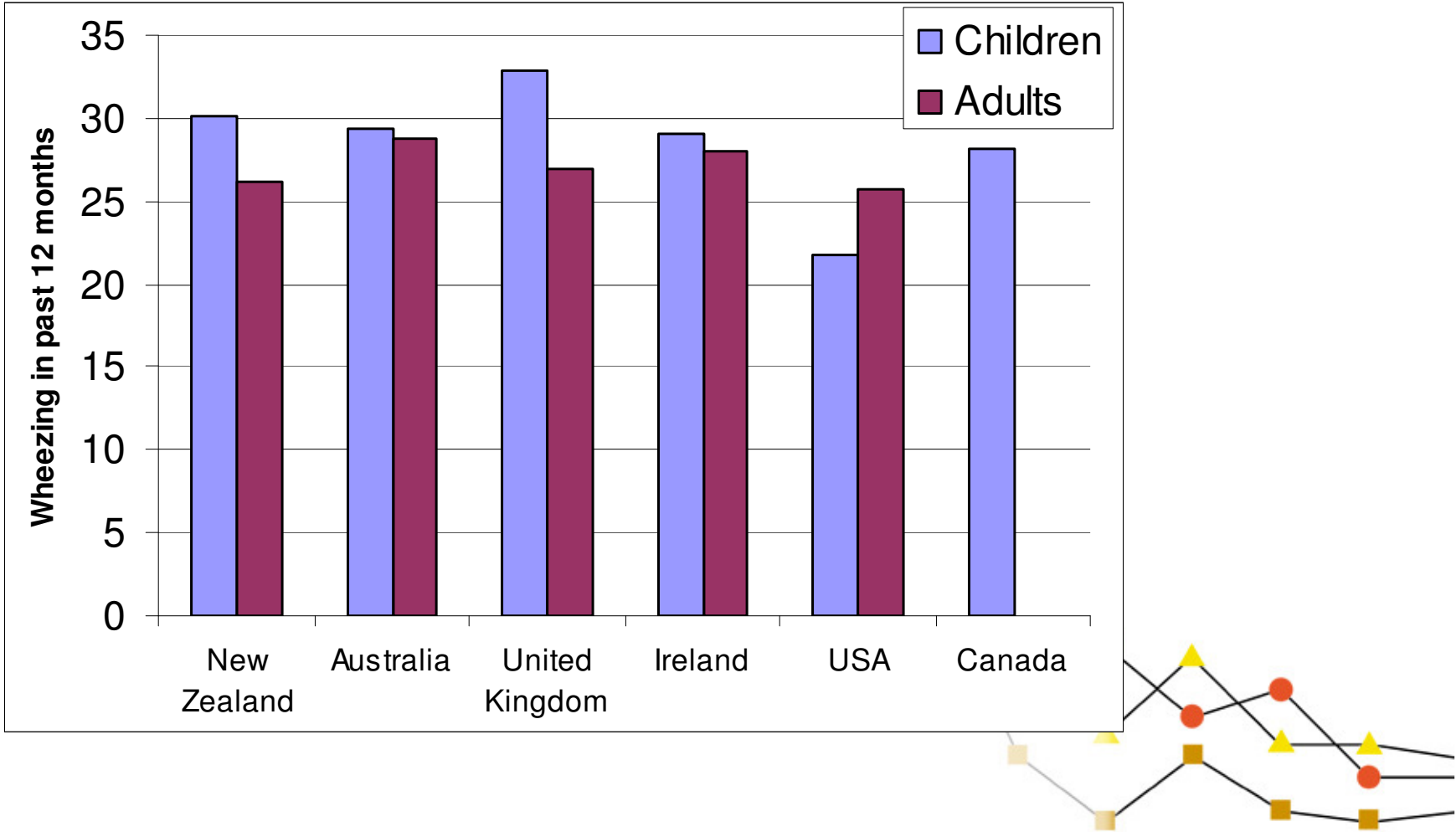


**ISAAC C
Phase One**

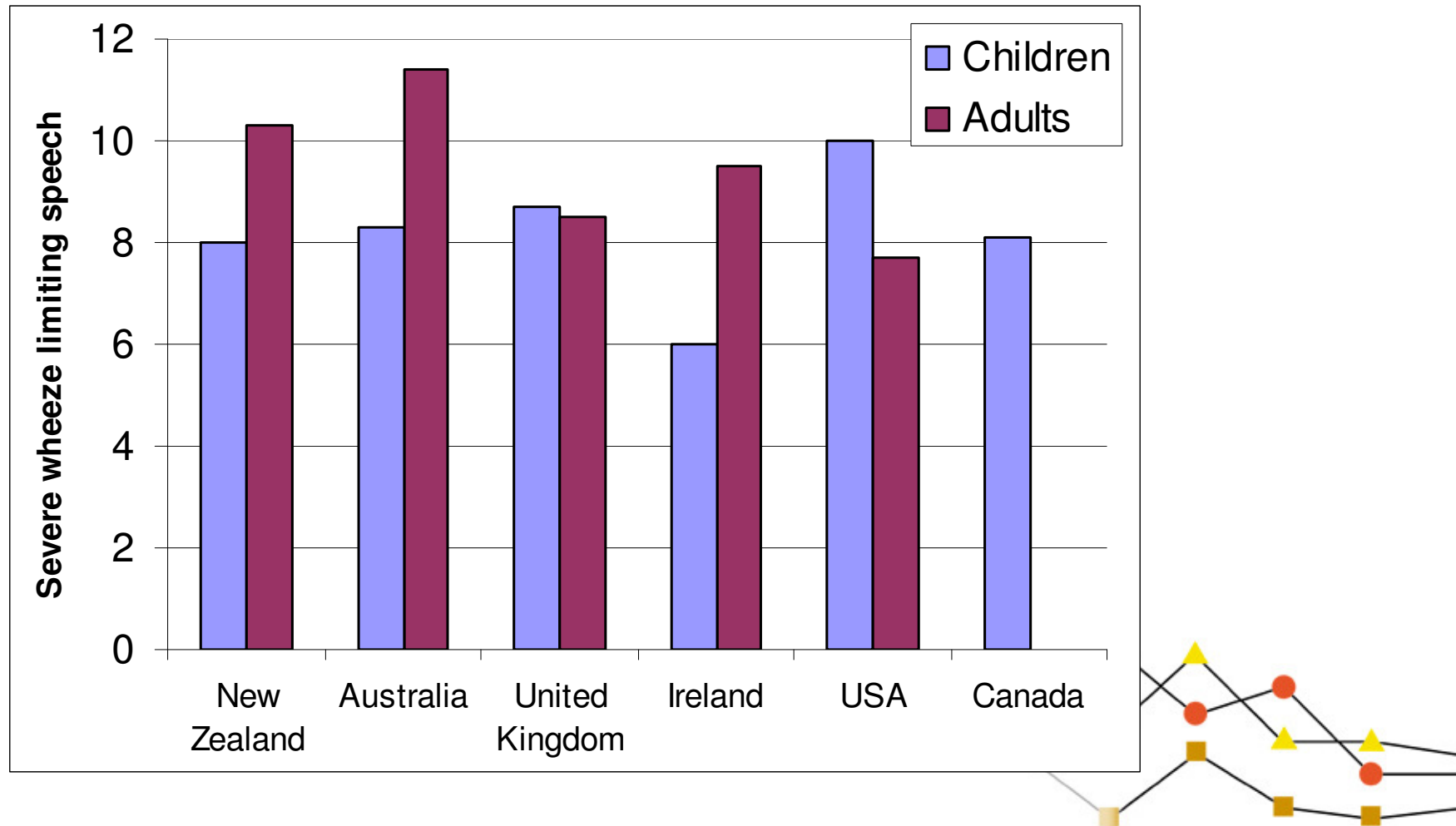
**Wheeze in last 12 mths
13-14 yr age grp**



Asthma prevalence in English-speaking countries

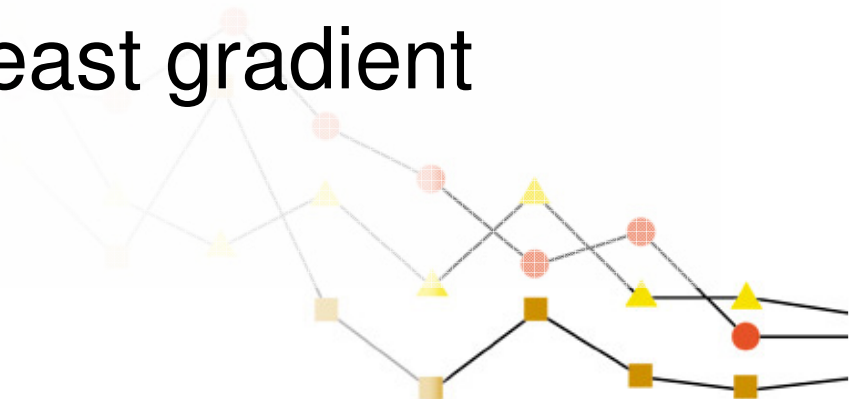


Asthma severity in English-speaking countries



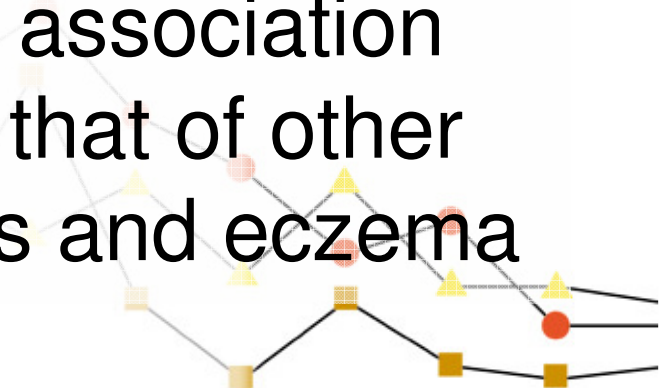
Key Findings From ISAAC Phase I

- English-speaking countries have the highest asthma prevalence in the world
- There is little variation within the English-speaking countries
- Other countries in Latin America are also high
- There is a Northwest-Southeast gradient within Europe



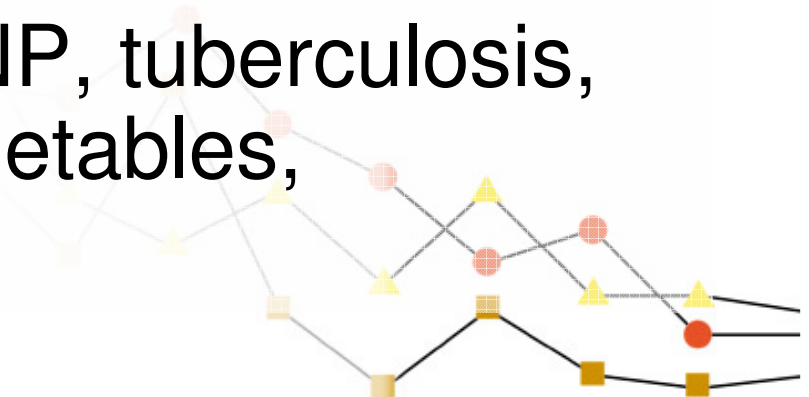
Key Findings From ISAAC Phase I

- There is an inconsistent correlation of asthma prevalence with affluence (as measured by GNP)
- There are some areas (West/East Germany, Hong Kong/Guangzhou) with major prevalence differences within the same ethnic group
- There is a weak and inconsistent association between asthma prevalence and that of other “atopic” conditions such as rhinitis and eczema



Key Findings From ISAAC Phase I

- Although there are large international differences in prevalence, these do not, in general, correlate strongly with recognised “risk factors” for asthma symptoms
- Negative associations (or no association) with air pollution, smoking, pollens, antibiotics, immunization
- Positive associations with GNP, tuberculosis, trans fatty acids, (lack of) vegetables, paracetamol, indoor humidity



Phase Three methods

Design: 3A Repeat prevalence studies after 5+ years

3B First prevalence studies in new centres

Study areas: From phase 1 (3A), or volunteers (3B)

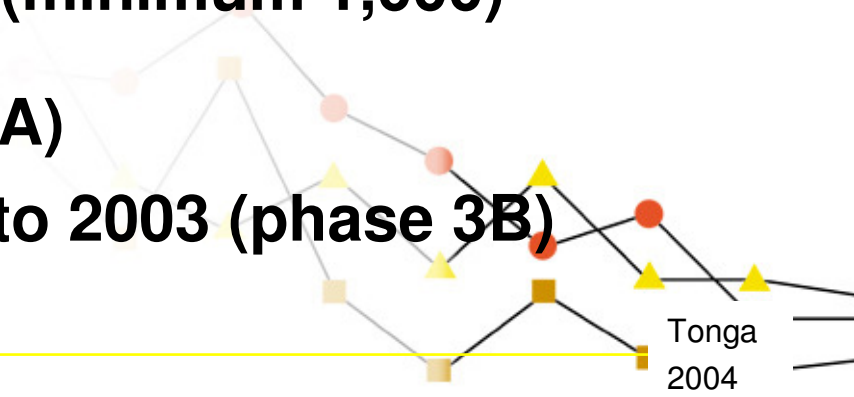
Population: 13-14 year old school children

6-7 year olds (strongly recommended)

Sample size: 3,000 children ideally (minimum 1,000)

Study period: 1999 to 2003 (phase 3A)

1998 (“late phase 1”) to 2003 (phase 3B)

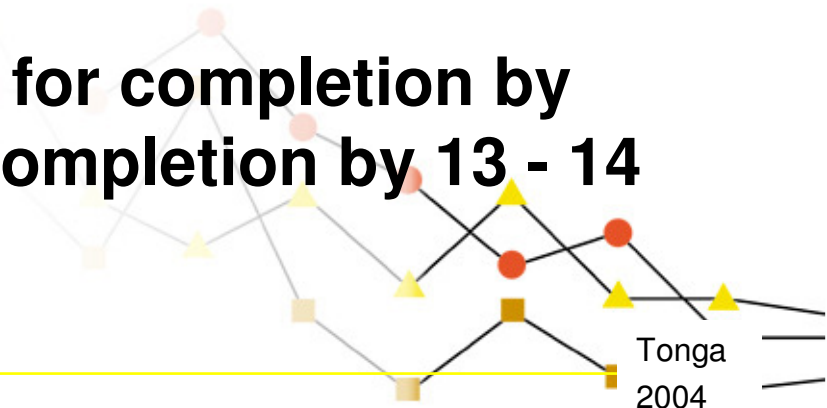


Phase Three “core” instruments

- written symptom questionnaires for self-completion in 13 - 14 yr olds (*compulsory*)
- video questionnaire for self-completion by 13 - 14 yr olds (*recommended*)
- written symptom questionnaires for completion by parents of 6 - 7 yr olds (*recommended*)
- written risk factor questionnaires for completion by parents of 6 - 7 yr olds, and self-completion by 13 - 14 year olds (*recommended*)



ISAAC

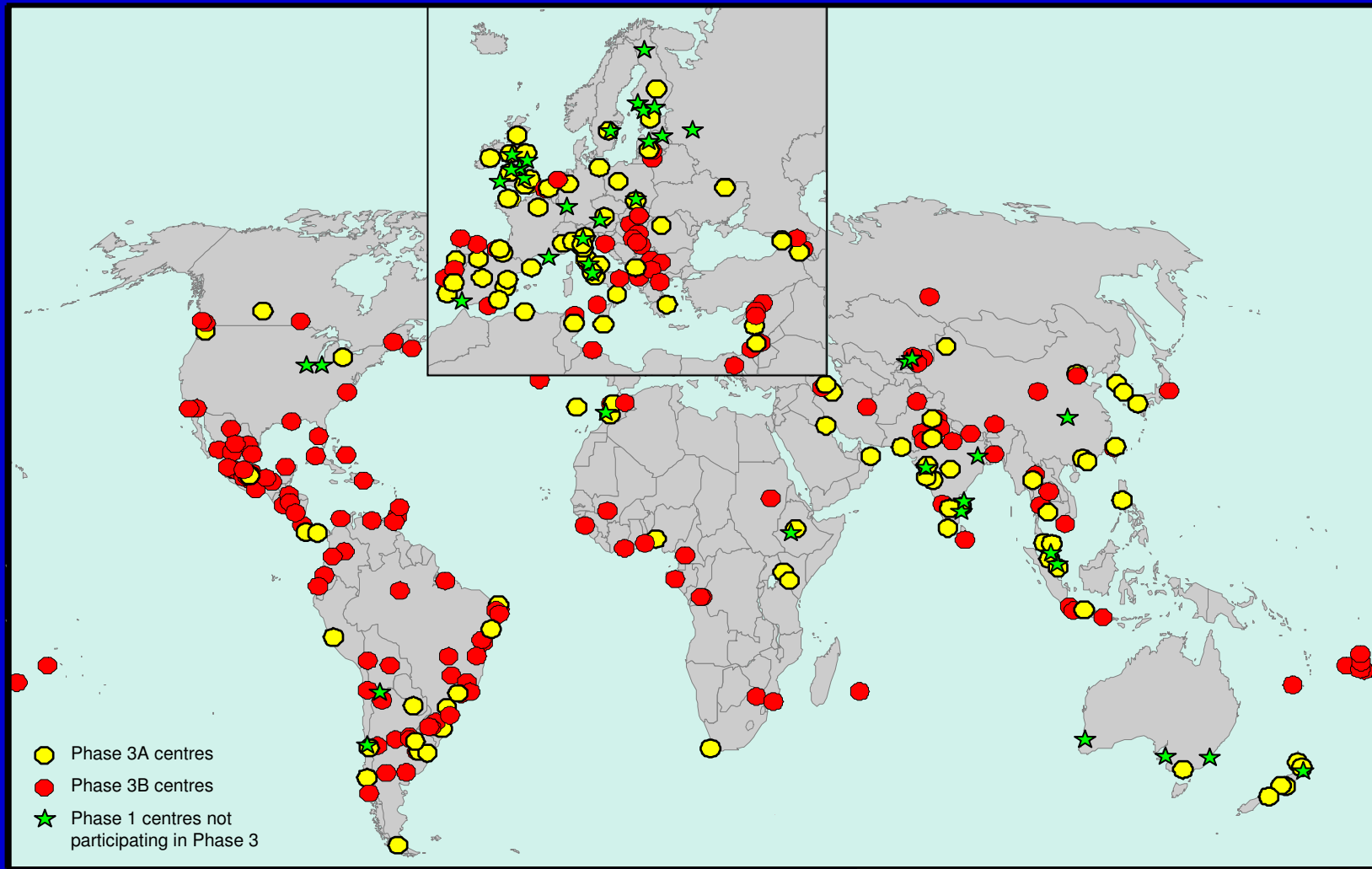


Study Centres and Participants: Phase III 13-14 Year Age Group

Region	Phase I centres	Phase IIIa centres	Phase IIIb centres
Africa	10	9	13
Asia-Pacific	35	23	23
Eastern/Northern Europe	17	12	16
Eastern Mediterranean	10	6	11
Latin America	16	15	41
North America	5	2	5
Oceania	10	5	9
Western Europe	51	34	10
Global Total:	155	106	127

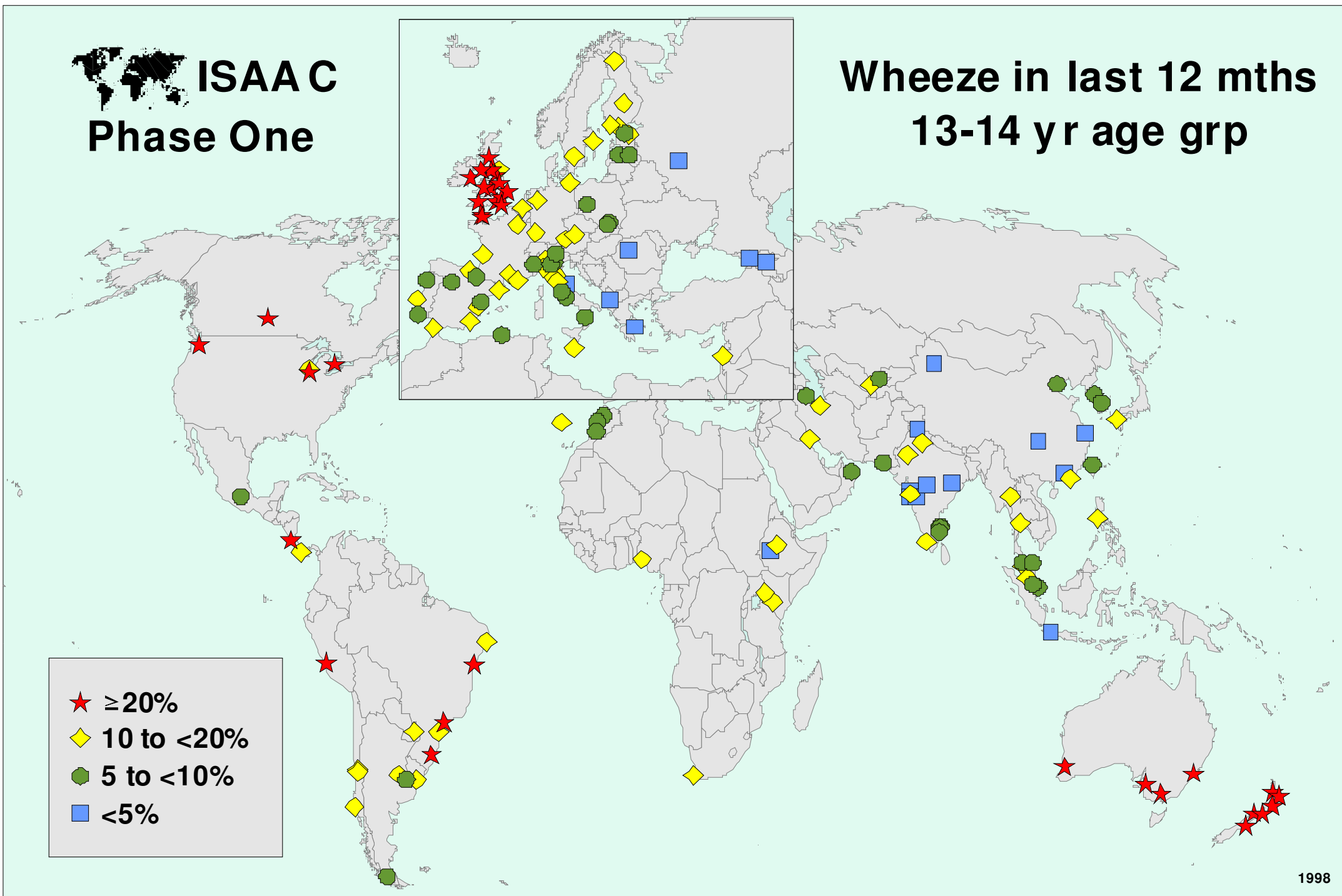


CENTRES REGISTERED FOR ISAAC PHASE THREE



 **ISAA C**
Phase One

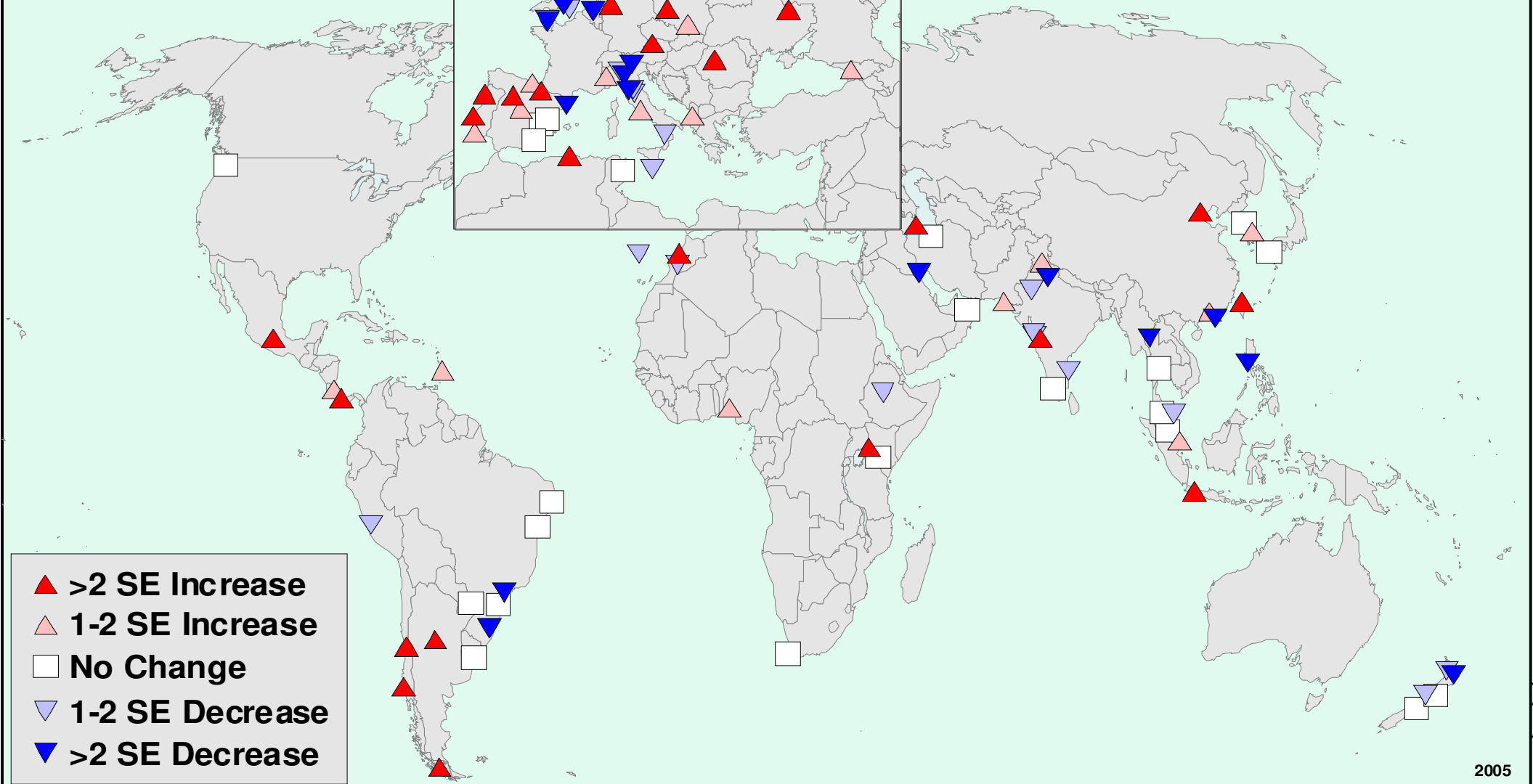
Wheeze in last 12 mths
13-14 yr age grp





ISAAC Phase Three

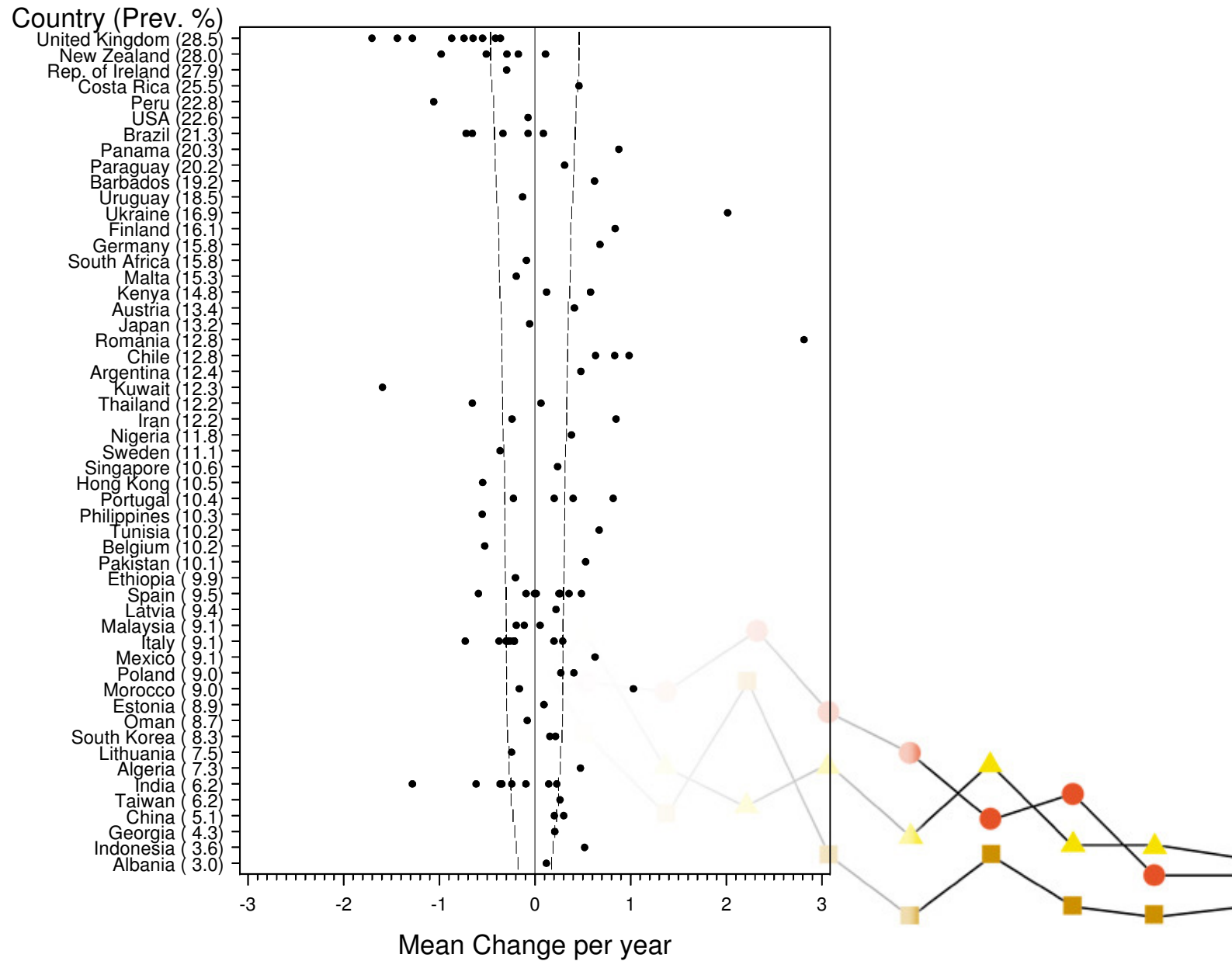
Change in Symptoms of Asthma 13-14 Year Age Group



- ▲ >2 SE Increase
- △ 1-2 SE Increase
- No Change
- ▽ 1-2 SE Decrease
- ▼ >2 SE Decrease

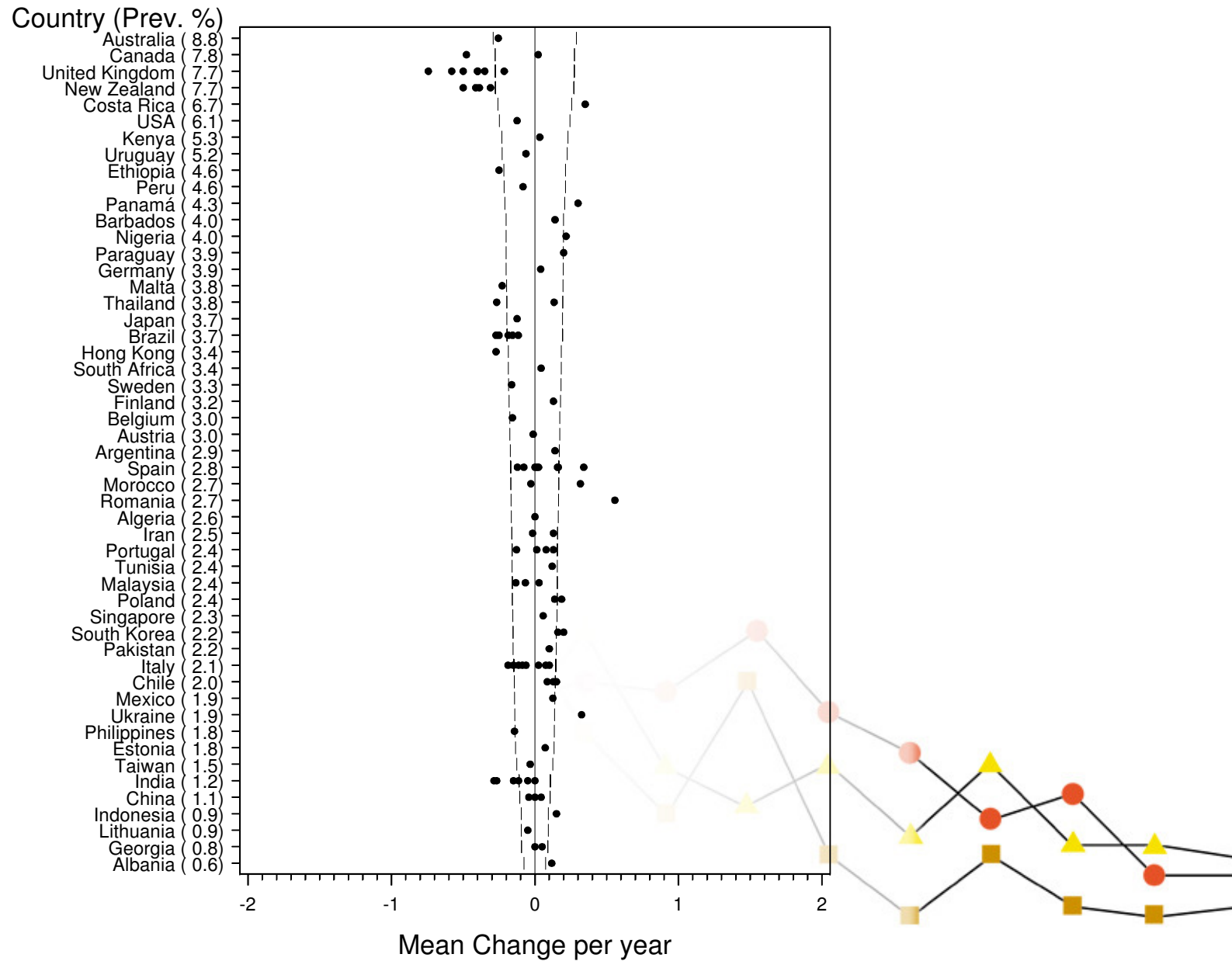
Change in Prevalence of Wheeze in last 12 months

Country ordered by average prevalence



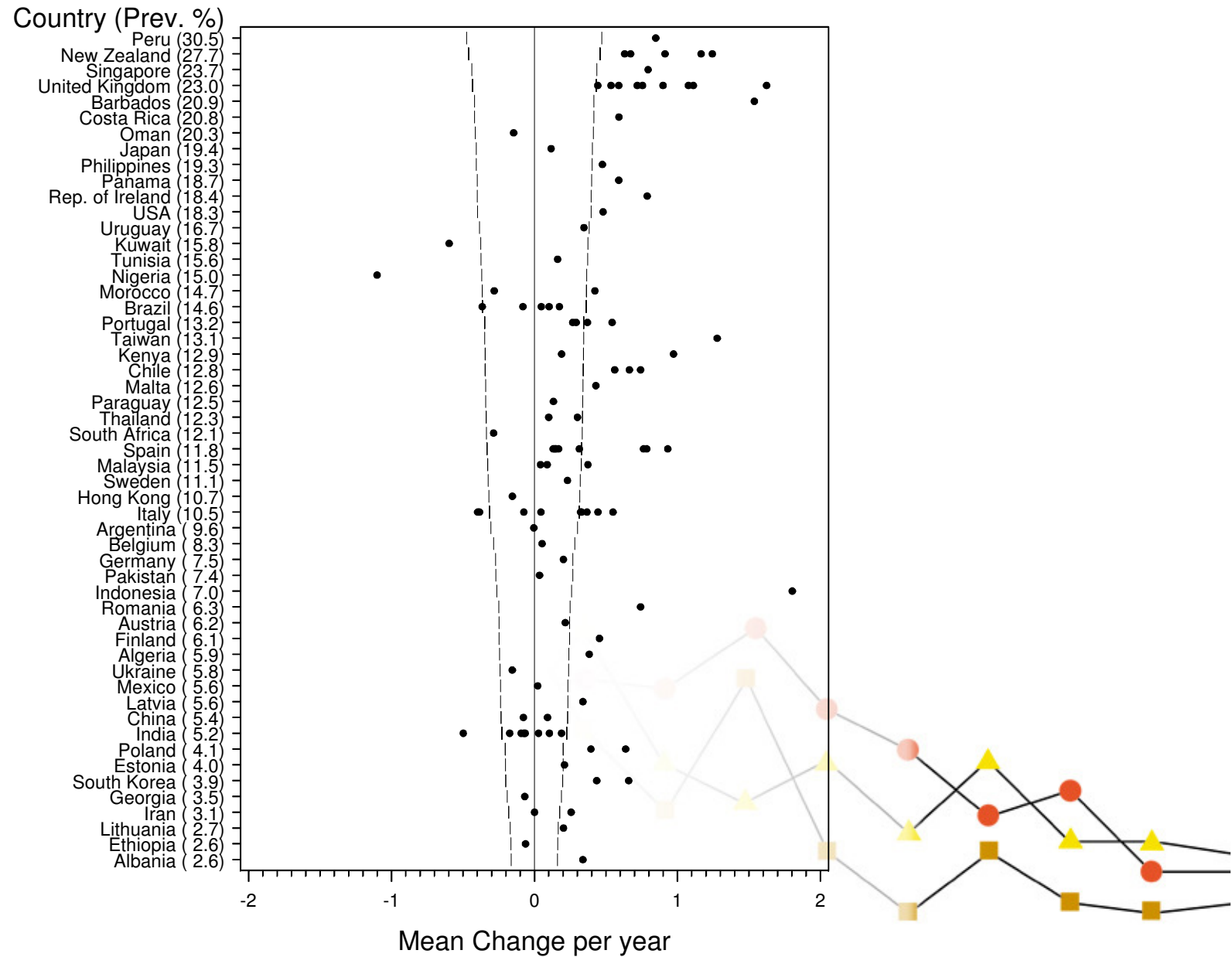
Change in Prevalence of ≥ 4 Attacks in last year

Country ordered by average prevalence



Change in Prevalence of Asthma Ever

Country ordered by average prevalence



Key Findings From ISAAC Phase III

- Little change in overall prevalence
- International differences in asthma symptom prevalence have reduced
- Decreases in English-speaking countries
- Increases in some (but not all) regions where prevalence was previously low
- Increases in diagnosed asthma in most regions
- Particular increases in Africa, Latin America and parts of Asia – asthma is no longer an “english speaking” disease

