

I S A A C

INTERNATIONAL
STUDY OF
ASTHMA AND
ALLERGIES IN
CHILDHOOD

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NEWSLETTER – DECEMBER 2005

Dear Colleagues,

On behalf of the Executive I would like to wish you all a very Merry Christmas and a happy New Year in this our last newsletter for 2005. Thank you for your important contributions to the ISAAC collaboration.

2005 has proven to be a most productive and busy year. We are in the final stages of preparing time trend papers for publication. The overview time trend paper for Phase Three has just been submitted to the Lancet for consideration and other papers will follow when their editorial decision has been made

This year the ERS was held in Copenhagen on the 17-21st September 2005. Philippa Ellwood from the IIDC in Auckland reports back on the ISAAC collaborators function. A wonderful event enjoyed by all. –see photos later in the newsletter.

Our hearts go out to all who were involved in the earthquake disaster in Pakistan, our ISAAC collaborator Dr Naseer Mahmood from Karachi travelled to the affected area after the ERS to assist his people.

This year the ISAAC Steering Committee Meeting was held in Hong Kong and hosted by Professor Chris Lai (Regional Coordinator for Asia Pacific) and Dr Gary Wong (Principal Investigator for the ISAAC Hong Kong 13/14 year olds) This meeting was an extremely productive and successful meeting. A big thank you must go to Professor Lai and Dr Wong for hosting such a wonderful event and for sharing with us all, the beauty and diversity of their country. An update on the ISAAC programme will accompany the next newsletter due out in March 2006, - watch this space.

We would like to conclude by wishing you all a very happy Christmas and happy new year, with enough time to be able to enjoy your friends and family, enough energy to play, and enough space to be able to rejuvenate.

Warmest Wishes

Innes Asher

Professor Innes Asher ONZM

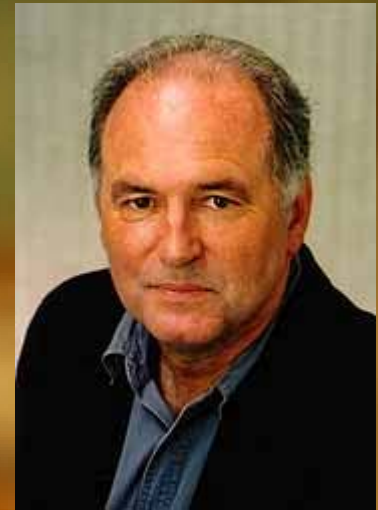
On behalf of the ISAAC International Data Centre and Steering Committee

NB: The Phase Three B data and methodology checks are now finalised. If you have any outstanding correspondence with Philippa or Tadd from the IIDC please attend to this urgently.



Our very own Professor Neil Pearce has been elected president of the International Epidemiology Association (IEA) at the recent World congress of Epidemiology in Bangkok.

Congratulations Neil
A well-deserved Honour



Neil Pearce: ISAAC Executive,
ISAAC Steering Committee,
Chairperson of the Data and Publications
Subcommittee,

Director of the Centre of Public Health Research,
Massey University, Wellington New Zealand

The association has just celebrated its 50th anniversary at the Bangkok meeting. Professor Pearce is the first president of the association from the Southern Hemisphere. He will be president – elect for three years, before assuming the presidency at the next World Congress of Epidemiology in Porto Alegre, Brazil in 2008

For more information go to:

http://masseynews.massey.ac.nz/2005/Press_Releases/09-01-05.html



**ISAAC COLLABORATORS AT THE 15TH ANNUAL CONGRESS
COPENHAGEN 17TH – 21ST SEPTEMBER 2005**

**European Respiratory Society Meeting
ERS**

Tuesday September 20th 2005 was the occasion of the 2005 ERS/ISAAC collaborators social gathering in Copenhagen, Denmark, which was well attended and a lot of fun.

It was wonderful to meet again, ISAAC collaborators that I had met on previous ISAAC/ERS social evenings and to meet for the first time “new” collaborators. With over 17,000 people attending the ERS over the 5 day period, an ISAAC collaborators gathering is a great way to keep in touch. It is like meeting up with family members from around the world and we very much would like to continue this tradition. I hope you enjoy the collection of photographs.

Shortly after my return to New Zealand I learnt about the earthquake disaster in Pakistan. Our ISAAC collaborator from Karachi, Dr Naseer Mahmood who attended the ERS/ISAAC gathering travelled to the affected area to assist his people. It must have been heart wrenching to witness the devastation. Our hearts go out to the huge number of people who have been affected by this disaster and we hope each day gets a little easier.

The ERS meeting for 2006 will be held in Munich from September 2nd to the 6th and we are presently exploring the logistics for an ISAAC gathering. Further details will be included in a 2006 newsletter.

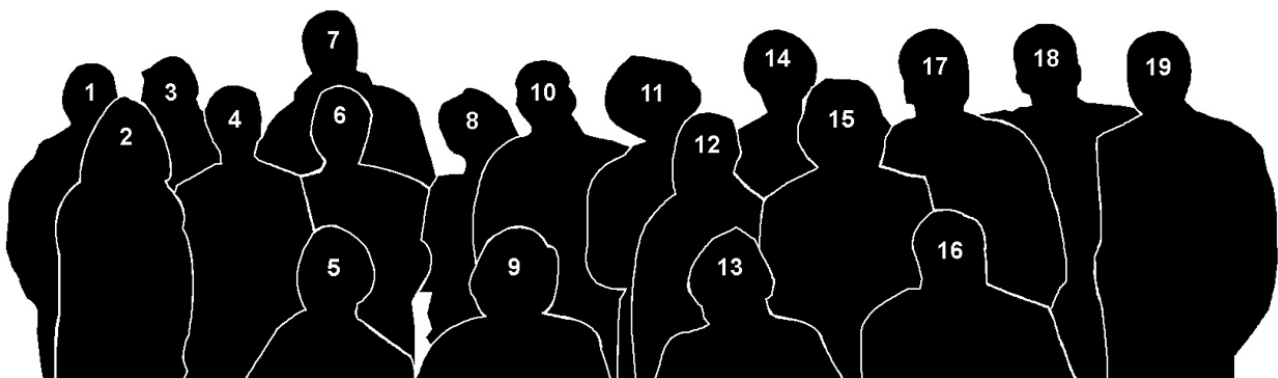
I would like to take this opportunity to thank all our ISAAC collaborators that I have had communication with over the past few years. Those I have met already and those I am still to meet. I hope one day it is possible to meet you all. I enjoy very much communicating with you. I would like to wish you and your families a happy Christmas, and a safe and productive 2006.

Kindest regards,

Philippa

**[Click here to see photos of the
ISAAC Collaborators Function](#)**






ISAAC Social Gathering, Copenhagen, Denmark,

- | | |
|------------------------------------|--|
| 1. Renato Stein, Brazil | 2. Heather Zar, South Africa |
| 3. Gilberto Fischer, Brazil | 4. Gary Wong, Hong Kong |
| 5. Philippa Ellwood, New Zealand | 6. Nadia Ait-Khaled, France |
| 7. Colin Robertson, Australia | 8. Lene Løchte, Denmark |
| 9. Sandra Nora Gonzalez, Mexico | 10. Manuel Soto Quiros, Costa Rica |
| 11. Györgyi Zsigmond, Hungary | 12. Zorica Zivkovic, Serbia & Montenegro |
| 13. Leticia Merida, Mexico | 14. Zoltán Novák, Hungary |
| 15. Margarite Figuero, El Salvador | 16. Osman Yusuf, Pakistan |
| 17. Valente Merida, Mexico | 18. Dante Hernández-Colín, Mexico |
| 19. Kirthi Gunasekera, Sri Lanka | |

Absent for photograph:

- | | |
|---------------------------------|-------------------------|
| Isabella Annesi-Maesano, France | Ahmed El Bousify, Libya |
| Luis García-Marcos, Spain | Lelià Lo Rusp, Italy |
| Federica Miceto, Italy | Pedro Mondéjar, Spain |
| Céline Péñarol-Morano, France | Todor Popov, Bulgaria |
| Chantal Raheison, France | Malcolm Sears, Canada |
| Emilija Vlaski, Macedonia | Hartmut Vogt, Sweden |






Poster: 3272

THE UNIVERSITY OF AUCKLAND
FACULTY OF MEDICAL AND HEALTH SCIENCES

Replication of Sampling for Time Trends Analyses in an International Multi Centre Study - ISAAC

Philippa Ellwood, DipDN DipPH¹, M Innes Asher, BSc MBChB FRACP¹, Alistair W Stewart, BSc DipSc² and the ISAAC Phase Three Study Group. ¹Department of Paediatrics, The University of Auckland, Auckland, New Zealand and ²School of Population Health, The University of Auckland, Auckland, New Zealand.



Abstract

Introduction: The development of the International Study of Asthma and Allergies in Childhood (ISAAC) began in 1991 to study the prevalence of asthma, allergic rhinitis and eczema in children between populations. Measurement of time trends in the prevalence of these conditions required replication of the sampling methodology between Phase One (1991-1995) and Three (2000-2005).

Methods: Our first step was to obtain the current methodology using repeated information on the Centre Register in 144 centres from 35 Countries. Any deviation from the Phase One methodology would be noted.

Results: In 27 countries (19%), replication of key components of the survey was achieved. Documented differences between Phase One and Three, reported by collaborators, included policy changes affecting the structure of the school year; different numbers of schools due to opening or closing of schools; population changes due to changes in migration and birth rates; boundary changes by local authorities affecting the sampling frame; and a combination changing passive to active consent and limiting access to school records; and structural constraints.

Conclusion: In 32 centres (23%), we found that the exact replication of the Phase One methodology was affected by one or more factors beyond the control of the ISAAC Collaborators. These factors are unlikely to have occurred in a systematic way and therefore are unlikely to bias or affect the worldwide pattern of time trends.

Aim: To evaluate the replication of the methodology of repeated cross-sectional studies to determine the comparability of ISAAC centres.

Methods: ISAAC - a global, cross-sectional study of school children in 101 different geographical areas worldwide - is the largest epidemiological collaborative study ever undertaken in children (http://www.auckland.ac.nz).

Phase One involved 138 centres from 56 countries.

- The Phase Three Time Trends analysis focused the same centres as Phase One and the same age groups: 11-14 year olds (adolescents) and 6-7 year olds (children) in 138 centres using the same design as Phase One (1).
- Each centre has a Principal Investigator (PI) and a National Coordinator. The ISAAC Steering Committee (SC) is made up of Regional Coordinators from the 10 Regions, a 2 member Executive and 3 Committee Members and communicates regularly with the 115 National Coordinators and the ISAAC International Data Centre (IDC) in Auckland, New Zealand.
- The Phase Three Time Trends methodology to replicate Phase One centres was using computerized Phase One survey data, the same consent forms, age groups, target sample size, selection of 100 schools, questionnaire translation from English to a local language and type of practice visit selection. The Phase Three Centre Register and methodological details were developed and returned to the IDC with the Phase Three data, was compared to the Phase One Centre Register to examine any methodological differences.
- The Centre Register allows space for Collaborators to note any difficulties encountered or factors for not adhering to the protocol.
- All Deviations from protocol are noted and the Steering Committee make a recommendation as to whether a centre is included, excluded or included with a restriction in one time trends publication.

Problems voiced by researchers/collaborators in the Phase Three Centre Report

- Policy change which affected the structure of the school year
- Closing or opening of schools due to opening or closing of schools
- Population change due to change in migration and birth rates, which affected the sample size between Phases
- Boundary changes by local authorities affecting the sampling frame
- Local authority changes passive to active consent and limiting access to school records
- Structural constraints

Results

Complete replication of key methodological features was achieved in 70 (20%) centres. The method of consent was the main factor that had the most effect on centres.

Method of consent

Active consent (written or electronic letter or text form) in partnership with an explanation of the study and information on who to ring. Phase One did not have this step in partnership. Active consent is a letter and consent form and there are no restrictions on the parent to sign consent on behalf of the child before their child's participation.

Written consent was required in more centres in Phase Three than in Phase One.

In Phase One, three day bit speaking periods, passive consent and two of three centres failed to reach the required response rate (minimum of 70%). In Phase Three nine English language centres were required to obtain written consent and two of these centres failed to reach the required response rate.

Another difficulty faced by researchers was replicating the study in the same time of year which allowed 16 centres.

Written consent was required in more centres in Phase Three than in Phase One.

Differences between Phase One and Three included:

- Response rate less than 50% (n=9) for other reasons.
- Sampling frame modified between Phase One (1).
- Method of consent changed (n=10) between One (1).
- Loss of access to school records (n=10) between One (1) and Three (1).
- Data needed to be inactive (n=10) between One (1) and Three (1).
- Single day entry for Phase Three (n=4).
- Additional questions administered within the ISAAC questionnaires for Phase Three (n=2).
- Use of different translations or questionnaires for Phase One and Phase Three (n=1).

Discussion

The majority of non-eligible centres (70%) were unable to replicate the method employed between Phase One and Phase Three. 50% of centres were unable to replicate the study exactly. The main factor that impacted on the comparability between phases, was the requirement of written consent. Even prior to the beginning of the study 33 centres were unable to write consent on addressing all of response rates and this increased to the world level could be more likely to participate than those that are not allowed. The use of consent in questionnaire based studies need careful evaluation. Non-eligible centres were either passive from protocol and facilitated one or more to reach the Time Trends publications.

Conclusion

We found that although some centres experienced difficulties replicating their centre in replicating ISAAC Phase One and Three, most of these were the deviations from protocol. These factors were unlikely to have occurred in a systematic way and therefore are unlikely to have an effect on the worldwide pattern of time trends. Documentation and comparison of methodology is of importance to improve responses in a global collaborative study such as ISAAC and we have confirmed that the data for our Time Trends analysis is of the highest standard.




Figure: The effect of active and passive consent

Phase One (1991-1995) and Phase Three (2000-2005) response rates for English Language centres. The chart shows that active consent (red) generally results in higher response rates (around 80-100%) compared to passive consent (black), which often falls below 70%.

| | | |
|-----------|---------------------|----------------|
| Albania | Algeria | Argentina |
| Australia | Austria | Barbados |
| Belgium | Brazil | Belgium |
| Canada | Chad | China |
| China | Costa Rica | Ecuador |
| Ethiopia | France | Germany |
| Germany | Hong Kong | India |
| Indonesia | Iran | Ireland |
| Italy | Japan | Kenya |
| Kuwait | Latvia | Lithuania |
| Malaysia | Malta | Mexico |
| Morocco | New Zealand | Nigeria |
| Pakistan | Peru | Poland |
| Peru | Philippines | Romania |
| Portugal | Republic of Ireland | Romania |
| Singapore | South Africa | South Korea |
| Spain | Sultanate of Oman | Sweden |
| Taiwan | Thailand | Tunisia |
| USA | Ukraine | United Kingdom |

A poster presentation by Cantelle Maritz who received a Master of Public Health with distinction from the University of Pretoria for her work on “Challenges experienced in implementing the International Study of Asthma and Allergies in Childhood (ISAAC) protocol for establishing the prevalence of asthma, allergic rhinitis and eczema in children in a rural, resource-poor setting in South Africa.

Challenges experienced in implementing the International Study on Asthma and Allergies in Childhood (ISAAC) protocol for establishing the prevalence of asthma, allergic rhinitis and eczema in children in a rural, resource-poor setting in South Africa.

Maritz C, Wolvaardt JE, Vuyi K
 School of Health Systems and Public Health, University of Pretoria
 Find more on ISAAC at: <http://www.isaac.ac.za>



Aim

- To describe the prevalence and severity of asthma, rhinitis and eczema in school-going children
- To obtain baseline measures for assessment of future trends in the prevalence and severity of these diseases
- To provide a framework for further aetiological research into lifestyle, environmental, genetic and medical factors affecting these diseases

Study methods

A cross-sectional survey of children (8199 children) aged 6/7 and 13/14 by using the English ISAAC questionnaire also translated into Afrikaans and North-Sotho.



Setting

115 randomly selected schools in a 60km radius from the centre of Polokwane, Limpopo Province, South Africa.

Description of the ISAAC survey area, Polokwane, 2004/5

| Area | Month surveyed | Number of schools participated | Urban or rural |
|-----------|----------------|--------------------------------|----------------|
| Bahlaloga | Aug/Oct 2004 | 13 | Rural |
| Mankweng | Feb 2005 | 19 | Rural |
| Maraba | Aug/Oct 2004 | 18 | Rural |
| Maune | Aug/Oct 2004 | 13 | Rural |
| Mogodumo | Feb 2005 | 14 | Rural |
| Polokwane | Aug/Oct 2004 | 24 | Urban |
| Seshogo | Aug/Oct 2004 | 14 | Semi - urban |

Participants

Parents of children aged 6 - 7 years and children aged 13 - 14 years

Completed questionnaires by language and age group

| Factor | 6 and 7 year olds | 13 and 14 year olds |
|--|-------------------|---------------------|
| Completed questionnaire in Afrikaans | 5.4% | 9.8% |
| Completed questionnaire in English | 9.8% | 29.6% |
| Completed questionnaire in North Sotho | 84.7% | 60.6% |
| Questionnaire completed by parent | 10.7% | - |

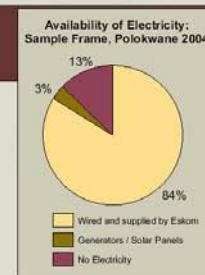
Challenges

The researchers experienced a number of challenges in the implementation of the standard ISAAC questionnaire namely:

- Lack of electricity and/or equipment that prevented the use of the prescribed videotape that illustrated the symptoms of asthma-particularly useful for completing the ISAAC written questionnaire. The video was deemed necessary to clarify terminology such as “wheezing”, “blocked / runny nose” etc.
- Lack of basic equipment
 Percentage of Schools in sample frame without basic equipment

| A Radio | Radio Tape Player | Television | Video Cassette Recorder | Type Writer (manual / electrical) | Duplicating Machine | Computer |
|---------|-------------------|------------|-------------------------|-----------------------------------|---------------------|----------|
| 75% | 78% | 65% | 69% | 57% | 52% | 63% |

Majority of the schools did not have the required equipment to follow the ISAAC protocol. The ISAAC video questionnaire could not be shown.



- Names of areas differed in the official lists and in the vernacular.
- Lack of official class lists in schools in rural areas.
- Lack of communication infrastructure with the deep rural schools.
- Lack of clear understanding of the questionnaire of parents and children. A large number of questionnaires could not be included in the final analysis due to inconsistent answering of questions with regard to “skip patterns”. In cases where a question was answered in the negative, the respondent should’ve moved on to another question, but this was not the case in the Polokwane study, therefore data might have been compromised.
- 90% of the questionnaires for the younger age group was completed by somebody other than a parent, e.g. guardian, sibling, grandmother who was not necessary in the position to report on past symptoms or diagnoses of conditions under investigation.

What was **not** an obstacle was the enthusiasm and willingness of schools, parents, teachers, students and communities to participate.

Conclusion

There is a clear need to develop materials and tools for the ISAAC study (or similar international studies) that would be useful in a resource poor setting which would enable studies of this kind to take place in developing countries and with participants whose literacy skills are poor.

Title: Challenges experienced in implementing the International Study on Asthma and Allergies in Childhood (ISAAC) protocol for establishing the prevalence of asthma, allergic rhinitis and eczema in children in a rural, resource-poor setting in South Africa.

Name of author/co-author: Maritz C, Wolvaardt JE, Voyi K
 Department: School of Health Systems and Public Health
 Introduction/aim:

- To describe the prevalence and severity of asthma, rhinitis and eczema in school-going children
- To obtain baseline measures for assessment of future trends in the prevalence and severity of these diseases
- To provide a framework for further aetiological research into lifestyle, environmental, genetic and medical factors affecting these diseases

Study Methods:
 A cross-sectional survey of children (8199 children) aged 6/7 and 13/14 by using the English ISAAC questionnaire also translated into Afrikaans and North-Sotho.
 Setting: 115 randomly selected schools in a 60km radius from the centre of Polokwane, Limpopo Province, South Africa.



Percentage of Schools in sample frame without basic equipment

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|---------|-------------------|------------|-------------------------|-----------------------------------|---------------------|----------|
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Completed questionnaires by language and age group

| Factor | 6 and 7 year olds | 13 and 14 year olds |
|--|-------------------|---------------------|
| Completed questionnaire in Afrikaans | 5.4% | 9.8% |
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| Questionnaire completed by parent | 10.7% | - |

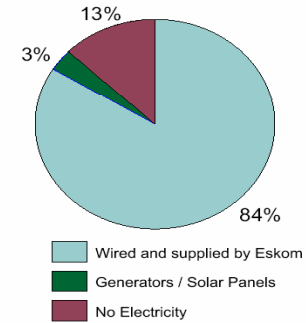
As seen above the majority of the schools did not have the required equipment to follow the ISAAC protocol. Eg, showing the ISAAC video questionnaire.

- Names of schools differed in the official lists and in the vernacular.
- Lack of official class lists for schools.
- Lack of communication infrastructure with the deep rural schools.
- Lack of clear understanding of the questionnaire of parents and children. A large number of questionnaires could not be included in the final analysis due to inconsistent answering of questions with regard question was answered in the negative, the respondent should've moved on to another question, but this was not the case in the Polokwane study, therefore data might have been compromised.
- 90% of the questionnaires for the younger age group was completed by somebody other than a parent, e.g. guardian, sibling, grandmother who was not necessary in the position to report on past symptoms of the child.

What was not an obstacle was the enthusiasm and willingness of schools, parents, teachers, students and communities to participate.

Summary:
 There is a clear need to develop materials and tools for the ISAAC study (or similar international studies) that would be useful in a resource poor setting which would enable studies of this kind to take place in develop where literacy skills are poor.

Availability of Electricity: Sample Frame, Polokwane 2004



Results:

The researchers experienced a number of challenges in the implementation of the standard ISAAC questionnaire namely:

- Lack of electricity and/or equipment that prevented the use of the prescribed videotape that illustrated the symptoms of asthma particularly useful for completing the ISAAC with young children. The video was deemed necessary to clarify terminology such as "wheezing", "blocked / runny nose" etc.

The urban/rural ratio of the surveyed schools was 33:67.

- Lack of basic equipment



Chantelle with supervisors





Chantelle with her two sets of twins aged 11 and 4 years "incredible effort"

Percentage of Schools in sample frame with basic equipment:

| A Radio | Radio Tape Player | Television | Video Cassette Recorder | Type Writer (manual/electrical) | Duplicating Machine | Computer |
|---------|-------------------|------------|-------------------------|---------------------------------|---------------------|----------|
| 75% | 78% | 65% | 69% | 57% | 52% | 63% |

The Rising Prevalence of Asthma, Allergic Rhinitis and Atopic Eczema in South African Children from 1995 to 2002

HJ Zar, *RI Ehrlich, EG Weinberg
 School of Child and Adolescent Health, Red Cross Children's Hospital and *School of Public Health, University of Cape Town, South Africa

ABSTRACT

Background: The prevalence of asthma and allergic disease in children has been increasing in developed countries, but there is little information on these trends in Africa.

Objective: To assess time trends in the symptoms of asthma, allergic rhinitis, and atopic eczema among South African adolescents.

Methods: Comparison of cross sectional data from two International Study of Asthma and Allergies in Childhood (ISAAC) questionnaire based surveys conducted 7 years apart of self-reported symptoms in 13 to 14 year old school children, in both surveys, schools in the same geographical area in Cape Town, South Africa, were randomly selected.

Results: A school-based sample of 5178 (in 1995) and 5176 (in 2002) pupils participated. The 12 month prevalence of exercise induced wheeze (21.5% vs. 32%), nocturnal cough (23.8% vs 34.5%), sleep disturbance due to wheeze (9.6% vs. 12.7%) or severe wheeze (5.1% vs. 7.6%) increased significantly as measured by the written questionnaire. A rise in asthma symptoms was confirmed by the video questionnaire responses in which the 12 month prevalence of wheezing (6.5% vs. 8.2%), exercise induced wheeze (11.5% vs. 12.8%), nocturnal wheeze (3.9% vs 4.8%), nocturnal cough (11.6% vs. 17.3%) or severe wheeze (5% vs. 6%) also increased significantly. However, more children had been diagnosed with asthma in 1995 compared to 2002 (13.1% vs 11.1%). The 12 month prevalence of symptoms of allergic rhinitis (30.4% vs 34.4%), rhinoconjunctivitis (17.8% vs 21.8%) and eczema (11.8% vs. 24.9%) also increased significantly. A similar increase in allergic symptoms occurred in girls and boys, but the prevalence in girls was higher. Limitation of daily activity from nasal symptoms (22.3% vs 33.7%) and sleep disturbance from eczema (9.4% vs 19.2%) were increasingly reported to impact on the quality of life.

Conclusion: Symptoms of asthma, allergic rhinitis and atopic eczema in adolescents have increased over the past 7 years in this geographical area. Allergic diseases are common in this group of adolescents and increasingly impair their quality of life.

METHODS

- comparison of cross sectional data from surveys of self-reported symptoms in ISAAC 1 (1995) and ISAAC 3 (2002) in 13 - 14 year old school children
- standardized ISAAC written and video questionnaire used
- random sample of schools in Cape Town Metropolitan area, same geographical area both surveys

RESULTS

The prevalence of asthma (table 1 and 2), allergic rhinitis (table 3) and atopic eczema (table 4) symptoms increased:

| Symptom | ISAAC 1 - 1995 n=5178 | ISAAC 3 - 2002 n=5165 |
|-------------------------|--------------------------|--------------------------|
| Wheeze | 16% | 15.5% |
| Exercise induced wheeze | 21.5% | 32%* |
| Nocturnal cough | 23.6% | 34.5%* |
| Severe wheeze | 5.1% | 7.6%* |
| Sleep disturbance | 9.6% | 12.7%* |
| Diagnosis asthma | 13.1% | 11.1%* |

* p < 0.001

| Symptom | ISAAC 1 - 1995 | ISAAC 3 - 2002 |
|-------------------------|----------------|----------------|
| Wheeze | 6.4% | 8.2%* |
| Exercise induced wheeze | 11.5% | 12.8%** |
| Nocturnal wheeze | 3.9% | 4.8%* |
| Nocturnal cough | 11.6% | 17.3%* |
| Severe wheeze | 5.1% | 6.0%** |

*p < 0.001, **p < 0.05

| Symptom | ISAAC 1 - 1995 | ISAAC 3 - 2002 |
|----------------------------|----------------|----------------|
| Nasal symptoms | 30.4% | 34.4%* |
| Impaired daily activity | 22.3% | 33.7%* |
| Severely impaired activity | 9.3% | 12.8%* |

*p < 0.001

| Symptom | ISAAC 1 - 1995 | ISAAC 3 - 2002 |
|--------------------------|----------------|----------------|
| Flexural rash | 8.9% | 21.6%* |
| Night waking due to rash | 8.4% | 19.2%* |
| Night waking > 1/week | 3.1% | 7.1%* |

*p < 0.001

CONCLUSION

- allergic diseases are common in this group of adolescents
- the prevalence of asthma, allergic rhinitis and atopic eczema increased over 7 years in this geographical area
- symptoms of allergic disease result in significant impairment of the quality of life

ACKNOWLEDGMENTS

Researchers - E Nguabi, S Abrahamse, K Fosseus
 Funding - MRC, South Africa, SA Thoracic Society AstraZeneca Respiratory Fellowship, AstraZeneca, Boehringer - Ingelheim, 3M, Schering - Plough, International ISAAC centre, New Zealand
 Department of Education, Western Cape, school staff, participants

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A Power point presentation presented at the ERS by Dr Vlaski

FAMILIAR SOCIO-ECONOMIC STATUS AND ASTHMA IN CHILDREN

Vlaski E,¹ Stavric K,¹ Isjanovska R,² Seckova L,¹ Kacarski D³

¹University Children's Hospital, ²Institute of epidemiology and biostatistics with medical informatics, ³PHO Zeleznicar Skopje, R. Macedonia

AIMS

As a positive association between socio-economic status and allergic diseases is suggested, the study was aimed:

- to explore the relationship between family size, mother's educational level, tobacco smoke at home, wood/coal/oil heating at home and BMI, as factors related to familiar socio-economic status, on asthma in schoolchildren.

MATERIAL AND METHODS

- Self-completed ISAAC phase 3 questionnaire on asthma and environmental questionnaire from 3026 children aged 13/14 yrs from 17 randomly selected schools in Skopje in 2001/2002
- Investigated parameters:
 - wheeze ever
 - wheeze in last 12 months
 - sleep-disturbing wheeze in last 12 months
 - speech-limiting wheeze in last 12 months
 - exercise-induced wheeze in last 12 months
 - dry night cough in last 12 months

MATERIAL AND METHODS

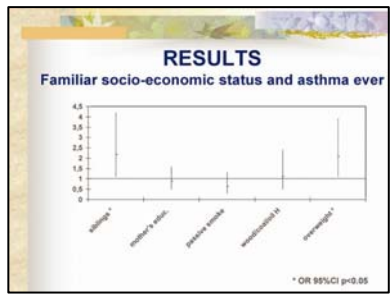
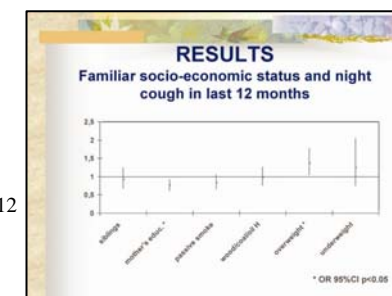
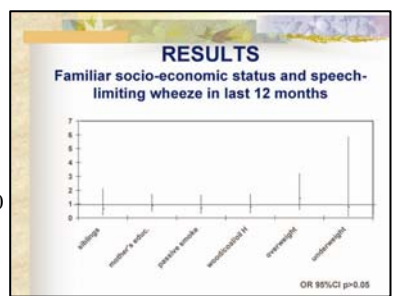
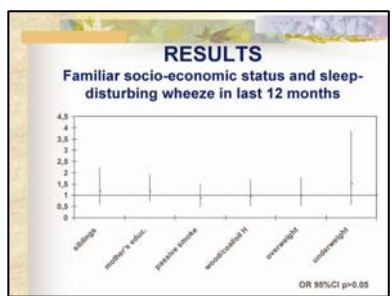
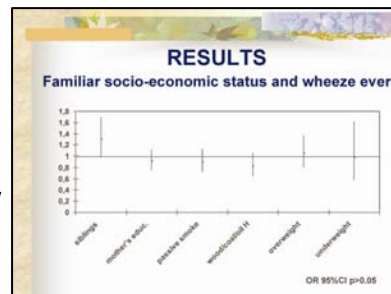
- asthma ever
- siblings (absence vs presence)
- mother's educational level (tertiary vs secondary and primary school)
- passive smoking at home (No vs Yes)
- wood/coal/oil heating at home (No vs Yes)
- BMI (high vs normal, low vs normal) (WHO cut off points for underweight and international ones for overweight used)
- Statistic analysis with odds ratios (OR) in binary logistic regression

RESULTS
Prevalence of asthma symptoms

| Symptom | N=3,026 | n (%) |
|---|---------|------------|
| Wheeze ever | | 556 (18.4) |
| Wheeze in last 12 months | | 266 (8.8) |
| Sleep-disturbing wheeze in last 12 months | | 87 (2.9) |
| Speech-limiting wheeze in last 12 months | | 36 (1.2) |
| Exercise-induced wheeze in last 12 months | | 431 (14.2) |
| Dry night cough in last 12 months | | 498 (16.5) |
| Asthma ever | | 52 (1.7) |

RESULTS
Prevalence of socio-economic status parameters

| Parameter | N=3,026 | n (%) |
|-------------------------------|---------|-------------|
| Siblings one or more | | 2619 (86.5) |
| Mother's educational level | | |
| tertiary | | 1546 (51.1) |
| secondary and primary | | 1471 (48.6) |
| Passive smoking at home | | 2211 (73.1) |
| Wood/coal/oil heating at home | | 546 (18.0) |
| BMI | | |
| normal | | 2378 (78.6) |
| overweight | | 443 (14.6) |
| underweight | | 107 (3.5) |



CONCLUSION

- Our results support the familiar socio-economic status hypothesis in asthma.
- It was established that small family size and high BMI, as factors related to increased familiar socio-economic status, significantly increased the risk of self-reported asthma in schoolchildren.
- The negative association between mother's educational level and night cough might be due to no specificity of this symptom for asthma in childhood.

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Is Eczema really on the increase worldwide?



Is Eczema really on the increase worldwide?



Hywel Williams*, Aislinn Stewart, Erlin van Natta, William Cookson, Rose Anderson and the ISAAC study team.
*Centre of Evidence-Based Dermatology, Queen's Medical Centre University Hospital, Nottingham NG7 2UH

Why did we do this study?

We wanted to see if eczema symptoms have increased worldwide over the last 5-7 years because:

- Eczema is common
- Eczema carries an economic burden comparable to asthma
- Many reports seem to say that "allergic" diseases such as asthma, eczema and hay fever, have been on the increase over the last 30 to 40 years, yet there is little good quality evidence to back such claims.
- Disease definitions from previous surveys in single countries have often varied between successive surveys
- Labeling by doctors and patients in the use of the term "allergy" may have contributed to pseudo epidemics
- Knowledge of these trends is important as they provide clues about possible environmental causes of eczema



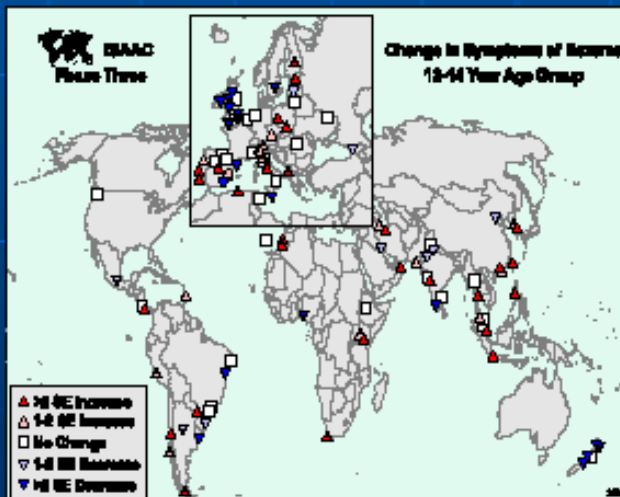
What did we do?

The International Study of Asthma and Allergies in Childhood (ISAAC) is a global research collaboration aimed at determining the prevalence and possible causes of allergic diseases.

- Cross national study of 2 age groups of school children (6-7 yr olds and 13-14 yr olds) drawn from a random sample of schools in defined geographical areas conducted in ISAAC Phase 1 were repeated using identical methods for ISAAC Phase 3, a round 5-7 years later.
- Simple standardised and validated questionnaires are used with questions on asthma, rhinitis and eczema. The details of the study design and methods are described in detail elsewhere. (Gisbert P et al and the ISAAC Steering Committee. The International study of asthma and allergies in childhood (ISAAC): phase 3 survey methods and standards. International Journal of Tuberculosis & Lung Disease 2004;7(1):4-12)
- Current symptoms of eczema were estimated by positive answers to 3 questions:
"Have you (has your child) ever had an itchy skin rash which was coming and going for at least 6 months?"
If yes: "Have you (has your child) ever had this itchy rash at any time in the last 12 months?" If yes:
"How has this itchy rash at any time affected any of the following places: the side of the neck, elbows, behind the knees, in front of the ankles, under the buttocks, or around the neck, ears or eyes?"
- World maps were created illustrating the change for each condition in each centre. A threshold of ± 1 standard error is used as an indicator of meaningful change from a clinical or public health perspective between Phase One and Phase Three. The calculation of the standard error incorporates an adjustment for the cluster sampling methodology.

What did we show?

The map below shows the change in prevalence of eczema symptoms between two successive ISAAC surveys 5-7 years apart for 298,000 children aged 13-14 years from 104 centres in 33 countries. The average % change per year was divided by the standard error values to identify categories of >1 , 1-1, no change, -1-2 and <-2 standard errors as shown in the map below. Red symbols indicate an increase in prevalence, blue a downward trend, and white no substantial change.



Absolute magnitude of changes per year per region are shown below:

| Region | Prevalence of eczema symptoms % Phase One | Phase Three Change/year Africa (Big fish up) | 12.7 |
|--------------------|---|--|------|
| Africa (French up) | 13.1 | 0.4 | |
| Asia-Pacific | 6.6 | 12.3 | 0.6 |
| Eastern Med. | 4.8 | 0 | 0.1 |
| Eastern Sub-Sah. | 8.8 | 6.7 | 0.5 |
| Latin America | 4.7 | 4 | -0.1 |
| North America | 7.2 | 0 | 0.1 |
| North Europe | 6.4 | 7.6 | 0.5 |
| Oceania | 6.1 | 7 | 0.1 |
| South Europe | 13.8 | 0.8 | -0.1 |
| Western Europe | 7.7 | 7.1 | -0.1 |
| Global | 7 | 7.3 | 0.1 |

Main observations:

- Changes in prevalence per year (weighted by the standard error) over the 7 year period were generally small.
- That when multiplied over a 20 year span, an increase of 0.4% translates to an absolute increase of 8%, which is quite large.
- Many of the centres previously showing the highest prevalence now show a levelling off or decrease in prevalence.
- Similar patterns are seen for those with severe eczema (data not shown), arguing against differential reporting of mild disease.
- The picture elsewhere is mixed, with many formerly low prevalence countries experiencing substantial increases in eczema symptoms.

What does it all mean?

1. It is difficult and inappropriate to make generalisations about eczema symptoms across the whole world as different things appear to be happening in different places.
2. Although the ISAAC study has great strengths in terms of comprehensive coverage, and the use of identical standardised methods for repeat surveys, it is still possible that reported symptoms can be distorted by translation and cultural issues which could have changed over time.
3. The most important finding is that the epidemic of eczema seems to be levelling off or falling in some countries with previously high prevalence rates.
4. The picture elsewhere is mixed, with many formerly low prevalence countries experiencing substantial increases.
5. Collectively, the observations suggest that environmental factors are important for determining disease expression, and that a threshold effect may be operating whereby a number of susceptible develop disease until a threshold occurs.
6. The study has highlighted areas of the World where eczema appears to be on the rapid increase where primary and secondary prevention programmes might be targeted.

Kyrgyzstan October 2005

I was extremely honoured to be invited recently to an international conference in Jalalabat, Kyrgyzstan to present on the ISAAC study. This conference was supported by the European Respiratory Society (ERS) and my travel was also sponsored by the ERS.

This was a tremendously exciting opportunity for me as I had never been to this part of the world before and I appreciated the opportunity to meet our ISAAC collaborators. However the logistics of travelling to Kyrgyzstan took a lot of planning and working out. I travelled for 35 hours, from New Zealand, (which included transits in Hong Kong, Delhi and Tashkent,) to Bishkek, the capital of Kyrgyzstan where I stayed for two nights before flying to Jalalabat.

My stay in Bishkek was made memorable by the kind invitation to stay with our Bishkek ISAAC Collaborator, Dr Cholpon Imanalieva and her lovely family. I visited the hospital where Cholpon and her colleagues worked and presented to her group after being given a wonderful lunch in their office. The following day I flew to Jalalabat in a very small plane, over the most magnificent mountain ranges, so close I felt that I could touch the tallest peaks. It was a beautiful day and the scenery was extraordinarily beautiful. I was collected from the airport by Nurlan, a local Dr and Higul, who was my interpreter for the occasion. My accommodation in Jalalabat was at Kutbolsun in the Health Resort area where the pure water is reported to be of the finest quality and consumed for its healing qualities by those who stay at the Health Resort. The view from my room was of those beautiful mountains that I had flown over. The 2 day international conference was organised by the ISAAC Jalalabat collaborator, Dr Shairbek Sulaimanov which was well attended and most successful. After the conference some of the delegates enjoyed a trip to the mountains where we visited a famous waterfall and afterwards were provided with a sumptuous meal before driving back to our accommodation.

My stay in Kyrgyzstan was enhanced by the kindness shown to me by everyone that I met. I enjoyed very much meeting new friends and I am indebted to the many that went out of their way to look after me in Bishkek and Jalalabat. Despite the language difficulties we were able to communicate and understand each other. The ISAAC collaboration and the ERS have provided me with an opportunity to appreciate a different environment and I am grateful. I have been humbled by my experience in Kyrgyzstan. I would have loved to include all my photos of this beautiful country.

To my friends in Kyrgyzstan: I feel truly privileged to have experienced your hospitality, your kindness, your generosity, your warmth and your sincerity. I loved my stay in Kyrgyzstan and hope in the years to come, that an opportunity to return is possible.

I will never forget you all.

Thank you.

Philippa Ellwood



Kyrgyzstan Photos

ISAAC Kyrgyzstan's National Collaborator from Bishkek and Principal Investigator, Dr Cholpon Imanalieva and her wonderful ISAAC team



The International ERS Summer School Conference in Jalalabat, with the ISAAC Jalalabat Principal Investigator Dr Shairbek Sulaimanov.



Thank you to you all for your warmth and love, I will treasure memories for always.



ISAAC Phase One Worldwide Publications

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1.0 Preliminary Papers

- 1.1 ISAAC Phase One Manual. 2nd ed. Auckland and Münster: ISAAC Steering Committee, 1993.
- 1.2 Pearce NE, Weiland S, Keil U, Langridge P, Anderson HR, Strachan D, Bauman A, Young L, Gluyas P, Ruffin D, Crane J, Beasley R. Self-reported prevalence of asthma symptoms in children in Australia, England, Germany and New Zealand: an international comparison using the ISAAC written and video questionnaires. *Eur Resp J* 1993; 6: 1455-61.
- 1.3 Asher I, Keil U, Anderson HR, Beasley R, Crane J, Martinez F, Mitchell EA, Pearce N, Sibbald B, Stewart AW, Strachan D, Weiland SK, Williams HC. International study of asthma and allergies in childhood (ISAAC): rationale and methods. *Eur Resp J* 1995; 8: 483-91.

2.0 Main Findings

- 2.1 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. Worldwide variations in prevalence of symptoms of allergic rhinoconjunctivitis in children: The International Study of Asthma and Allergies in Childhood (ISAAC). *Paediatric Allergy Immunology* 1997; 8: 161-76.
- 2.2 ISAAC Steering Committee (Writing Committee: Beasley R, Keil U, Von Mutius E, Pearce N). Worldwide variation in prevalence of symptoms of asthma, allergic rhinoconjunctivitis and atopic eczema: ISAAC. *Lancet* 1998; 351: 1225-32.
- 2.3 Williams H, Robertson C, Stewart A, 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, Shah J, Sibbald B, Strachan D, von Mutius E, Weiland S. Worldwide variations in the prevalence of symptoms of atopic eczema in the international study of asthma and allergies in childhood. *J Allergy Clin Immunol* 1999; 103: 125-38.
- 2.4 ISAAC Steering Committee (Writing Committee: Asher MI, Anderson HR, Stewart AW, Crane J). Worldwide variations in the prevalence of asthma symptoms: International Study of Asthma and Allergies in Childhood (ISAAC). *Eur Respir J* 1998; 12: 315-35.

3.0 Other Overview Papers

- 3.1 Asher MI, Weiland SK, on behalf of the ISAAC Steering Committee. The International Study of Asthma and Allergies in Childhood. *Clin Exper Allergy* 1998; 28 (suppl 5): 52-66.
- 3.2 Beasley R, Ellwood P, Asher I. International patterns of the prevalence of pediatric asthma the ISAAC program. *Pediatric Clinics of North America* 2003; 50(3):539-53.
- 3.3 Lai C, Pearce N. The contribution of ISAAC to the understanding of asthma. *Leukotriene Res & Clin Rev* 2001; 2: 1-4.
- 3.4 Mallol J, Asher MI, Williams H, Clayton T, Beasley R. ISAAC Findings in children aged 14 years: an overview. *Allergy Clin Immunol Int* 1999; 11: 176-82.
- 3.5 von Mutius E. Epidemiology of asthma: ISAAC--International Study of Asthma and Allergies in Childhood. *Pediatr Allergy Immunol* 1996; 7(9 Suppl): 54-6.



ISAAC Phase One Worldwide Publications - Continue

4.0 Ecologic Analyses

- 4.1 Anderson R, Beasley R, David Strachan, Colin Robertson C, and the ISAAC Phase I Study Group. Mortality and hospitalisation rates. In preparation.
- 4.2 Anderson HR, Poloniecki JD, Strachan DP, Beasley R, Björkstén B, Asher MI. ISAAC Phase I Study Group. Immunization and symptoms of atopic disease in children: results from the International Study of Asthma and Allergies in Childhood. *Am J Publ Health* 2001; 91: 1126-9.
- 4.3 Anderson HR and the ISAAC Phase I Study Group. Air pollution and asthma prevalence. In preparation.
- 4.4 Asher I, et al. Overview of findings of ISAAC Phase I ecologic analyses. In preparation.
- 4.5 Burr ML, Emberlin JC, Treu R, Cheng S, Pearce N, and the ISAAC Phase I Study Group. Pollen counts in relation to the prevalence of rhinitis and asthma in the International Study of Asthma and Allergies in Childhood (ISAAC). *Clin Exper Allergy* 2003; 33: 1675-80.
- 4.6 Ellwood P, Asher MI, Björkstén B, Burr M, Pearce N, Robertson CF and the ISAAC Phase One Study Group. Diet and asthma, allergic rhinoconjunctivitis and atopic eczema symptom prevalence: an ecological analysis of the International Study of Asthma and Allergies in Childhood (ISAAC) data. *Eur Respir J* 2001; 17: 436-43.
- 4.7 Foliaki S, Björkstén B, Kildegaard-Nielsen S, von Mutius E, Cheng S, Pearce N. Antibiotic sales and the prevalence of symptoms of asthma, rhinitis and eczema in 13-14 year old children: The International Study of Asthma and Allergies in Childhood (ISAAC). *Int J Epidemiol* 2004; 33: 558-63.
- 4.8 Mitchell EA, Stewart AW, on behalf of the ISAAC Phase One Study Group. The ecological relationship of tobacco smoking to the prevalence of symptoms of asthma and other atopic diseases in children: The International Study of Asthma and Allergies in Childhood (ISAAC). *Eur J Epidemiol* 2002; 17: 667-73.
- 4.9 Shirtcliffe P, Weatherall M, Beasley R, on behalf of the ISAAC Phase I Study Group. An inverse correlation between estimated tuberculosis notification rates and asthma symptoms. *Respirology* 2002; 7: 153-5.
- 4.10 Stewart AW, Mitchell EA, Pearce N, Strachan DP, Weiland SK, on behalf of the ISAAC Steering Committee. The relationship of per capita gross national product to the prevalence of symptoms of asthma and other atopic diseases in children (ISAAC). *Int J Epidemiol* 2001; 30: 173-9.
- 4.11 von Mutius E, Pearce N, Beasley R, Cheng S, von Ehrenstein O, Björkstén B, Weiland S, on behalf of the ISAAC Steering Committee. International patterns of tuberculosis and the prevalence of symptoms of asthma, rhinitis and eczema. *Thorax* 2000; 55(6): 449-453
- 4.12 Weiland SK, von Mutius E, Hüsing A, Asher MI on behalf of the ISAAC Steering Committee. Intake of trans fatty acids and prevalence of childhood asthma and allergies in Europe. *Lancet* 1999; 353: 2040-41.
- 4.13 Weiland S, Hüsing A, Strachan DP, Pearce N, on behalf of the ISAAC Study Group and ISAAC Europe. Climate and the prevalence of symptoms of asthma, allergic rhinoconjunctivitis and atopic eczema in children. *Occup Environ Med* 2004; 61: 609-15.

Other Papers

- 5.1 Anderson R, Robertson C, Montefort S. World-wide variations in asthma in children: association with severity, evidence of other atopic diagnosis and sex ratio. In preparation.
- 5.2 Crane J, Mallol J, Beasley R, Stewart A, Asher MI, on behalf of the International Study of Asthma and Allergies in Childhood (ISAAC) Phase I study group. Agreement between written and video questions for comparing asthma symptoms in ISAAC. *Eur Respir J* 2003; 21: 455-61.
- 5.3 Pearce N, Sunyer J, Cheng S, Chinn S, Björkstén B, Burr M, Keil U, Anderson HR, Burney P, on behalf of the ISAAC Steering Committee and the European Community Respiratory Health Survey. Comparison on asthma prevalence in the ISAAC and the ECRHS. *Eur Resp J* 2000; 16: 420-6.
- 5.4 Stewart AW, Mitchell EA. Month of birth and childhood atopic diseases: the International Study of Asthma and Allergies in Childhood (ISAAC). In preparation.



ISAAC Phase Two Publications

1.0 Preliminary Papers

- 1.1 Weiland SK, Björkstén B, Brunekreef B, Cookson WOC, von Mutius E, Strachan DP, and the ISAAC Phase II Study Group. Phase II of the International Study of Asthma and Allergies in Childhood (ISAAC II): rationale and methods. Eur Respir J 2004; 24: 406-412.

ISAAC Phase Three Publications

1.0 Preliminary Papers

- 1.1 Ellwood P, Asher MI, Beasley R, Clayton TO, Stewart AW and the ISAAC Steering Committee. International Study of Asthma and Allergies in Childhood (ISAAC II): Phase III rationale and methods. Int J Tuberculosis Lung Dis 2005; 9: 10-6.

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From all of us at the IIDC and on behalf of the Executive,
we wish you all a happy and safe Christmas and happy new year.

May you have something to give



Something to share



And people to share it
with

Anything given with the right intentions is a gift – even a hug (un abrazo)

