# The ISAAC Story

The International Study of Asthma and Allergies in Childhood



The ISAAC Story

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The International Study of Asthma and Allergies in Childhood Steering Committee

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# The ISAAC Story The International Study of Asthma and Allergies in Childhood



M. Innes Asher, David P. Strachan, Neil Pearce & Luis García-Marcos, Eds.



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# Acknowledgements Funding of ISAAC Phase One

ISAAC was open to any collaborator who agreed to adhere to the protocol. Countries in which there was little existing information about asthma, rhinoconjunctivitis and eczema were particularly encouraged to participate. Each centre was responsible for obtaining its own funding. There were many field workers and funding agencies who supported data collection and national, regional and international meetings, including the meetings of the ISAAC Steering Committee. Unfortunately, these are too numerous to mention and are acknowledged elsewhere in local publications.

The ISAAC International Data Centre was funded by:

- · The Health Research Council of New Zealand,
- · The Asthma and Respiratory Foundation of New Zealand,
- The National Child Health Research Foundation,
- The Hawke's Bay Medical Research Foundation,
- · The Waikato Medical Research Foundation,
- · Glaxo Wellcome New Zealand
- · Astra New Zealand.

Glaxo Wellcome International Medical Affairs funded the regional co-ordinating centres.

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Treatment and Research Foundation of Turkey for Allergy, Asthma and Immunology,

The Research foundation of Hacettepe University, Faculty of Medicine.

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The Thorax Foundation Research Center.

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Italy: (Rome)

Lazio Regional Health Authority.

#### New Zealand: (Hastings)

Health Research Council of New Zealand,

Asthma and Respiratory Foundation of New Zealand,

Hawkes Bay Medical Research Foundation.

Sweden: (Linköping, Östersund)

The Swedish Foundation for Health Care Sciences and Allergy Research.

India: (Mumbai)

Jaslok Hospital & Research Centre.

#### West Bank: (Ramallah)

Al-Quds University, Directorate General for International Cooperation and Belgian Technical Cooperation.

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#### UK: (West Sussex)

South Thames National Health Service Regional and Development project SPGS.

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# Funding Organisations







HBMRF



















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### **Funding of ISAAC Phase Three**

As with ISAAC Phase One, ISAAC Phase Three was open to any collaborator who agreed to adhere to the protocol and each centre was requested to provide it's own funding. The programme was funded by the many funding bodies throughout the world that supported the individual ISAAC centres and collaborators and their meetings. In New Zealand ISAAC was funded by:

- The Health Research Council of New Zealand,
- · The Asthma and Respiratory Foundation of New Zealand,
- The Child Health Research Foundation,
- The Hawke's Bay Medical Research Foundation,
- The Waikato Medical Research Foundation,
- · Glaxo Wellcome New Zealand,
- · The NZ Lottery Board
- · Astra Zeneca New Zealand.

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# The ISAAC Story



#### **Centres**

## Regions

Africa

Asia-Pacific

Eastern Mediterranean

Indian Sub-Continent

Latin America

North America

Northern and Eastern Europe

Oceania

Western Europe

#### **Countries**

Albania

Algeria

Argentina

Australia

Austria

Barbados

Belgium

Bolivia

Brasil

Bulgaria

Cameroon

Canada

Channel Islands

Chile

China Colombia

Congo

Cook Islands

Costa Rica

Cote d'Ivoire

Croatia

Cuba

Ecuador

Egypt El Salvador

Estonia

Ethiopia

Fiji

Finland France

Gabon

Georgia

Germany

Ghana

Greece

Honduras

Hungary

Iceland India

> Indonesia Iran

Isle of Man

Italy

Japan Jordan

Kenya

Kuwait Kyrgyzstan

Latvia

Lebanon

Lithuania Malaysia

Malta

Mexico

Morocco

Netherlands

New Zealand

72-88

89-164

#### Countries Cont.

Nicaragua

Nigeria

Niue

Norway

Nouvelle Caledonie

Pakistan

Palestine

Panamá

Paraguay

Peru

Philippines

Poland

French Polynesia

Portugal

Republic of Ireland

Republic of Macedonia

République de Guinée

Republique Democratique du Congo

Reunion Island

Romania

Russia

Samoa

SAR China

Serbia and Montenegro

Singapore

South Africa

South Korea

Spain Sri Lanka

Sudan

Sultanate Of Oman

Sweden

Syria

Taiwan Thailand

Togo

Tokelau

Tonga

Trinidad and Tobago

Tunisia

Turkey Ukraine

United Kingdom

Uruguay

USA

Uzbekistan Venezuela

Vietnam

**Centres** 

Addis Ababa, Ethiopia Adelaide, Australia

Akola, India

Aleppo, Syria

Al-Khod, Sultanate Of Oman

Almeria, Spain

Alor Setar, Malaysia

Amman, Jordon

Ankara, Turkey

Aracaju, Brasil

Ascoli Piceno, Italy

165-352

A Coruña, Spain

Algiers, Algeria

Anglia and Oxford, United Kingdom

Antwerp, Belgium

Apia, Samoa

Asturias, Spain



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Centres Cont.

Asunción, Paraguay

Athens, Greece

Auckland, New Zealand

Bali, Indonesia

Balykchi, Kyrgyzstan

Bandung, Indonesia

Bangalore, India

Bangkok, Thailand

Barbados, Barbados

Barcelona, Spain

Bari, Italy

Barranquilla, Colombia

Bay of Plenty, New Zealand

Beijing, China

Beirut, Lebanon

Belgrade, Serbia And Montenegro

Belo Horizonte, Brasil

Benslimane, Morocco

Bikaner, India

Bilbao, Spain

Birjand, Iran

Bishkek, Kyrgyzstan

Bogotá, Colombia

Bombay (17), India

Bombay (16), India

Bombay (18), India

Bombay (29), India

Borivali, India

Boulmene, Morocco

Brasília, Brasil

Brazzaville, Congo

Buenos Aires, Argentina

Cádiz, Spain

Cairo, Egypt Calama, Chile

Cali, Colombia

Cape Town, South Africa

Caracas, Venezuela

Cartagena, Spain

Caruaru, Brasil

Casablanca, Morocco

Castellón, Spain

Central Santiago, Chile

Chandigarh, India

Chantaburi, Thailand

Chapel Hill, Usa

Chennai (3), India

Chiang Mai, Thailand

Chiangrai, Thailand

Chicago (3), Usa Chicago (4), Usa

Chiloe, Chile

Chongqing, China

Christchurch, New Zealand

Ciudad de México (1), Mexico

Ciudad de México (3), Mexico

Ciudad de México (4), Mexico Ciudad Victoria, Mexico

Cluj, Romania

Coimbra, Portugal

Colleferro-Tivoli, Italy

Conakry, République De Guinée

Córdoba, Argentina

Cosenza, Italy

Costa Rica, Costa Rica

Cremona, Italy

Crétail, France

Cuernavaca, Mexico

Curitiba, Brasil

Davangere, India

David-Panamá, Panamá Dresden, Germany

Eldoret, Kenya

Emilia-Romagna, Italy

Empoli, Italy

Feira de Santana, Brasil

Firenze, Italy

Frosinone, Italy

Fukuoka, Japan

Funchal, Portugal

Grand Tunis, Tunisia

Greifswald, Germany

Guangzhou, China Guayaquil, Ecuador

Guernsey, Channel Islands

Hamilton, Canada

Hawkes Bay, New Zealand

Helsinki, Finland

Ho Chi Minh City, Vietnam

Hong Kong 13-14, Sar China

Hong Kong 6-7, Sar China

Ibadan, Nigeria

Ipoh, Malaysia

Islamabad, Pakistan

Isle of Man, Isle Of Man

Itajaí, Brasil

Jaipur, India

Jalalabat, Kyrgyzstan

Jersey, Channel Islands

Jima, Ethiopia

Jodhpur, India

Karachi, Pakistan

Kärnten, Austria Kaunas, Lithuania

Kharkiv, Ukraine

Khartoum, Sudan Khon Kaen, Thailand

Kinshasa, Republique Democratique Du

Kintampo, Ghana

Klang Valley, Malaysia

Kota Bharu, Malaysia

Kottayam, India

Krakow (1993), Poland

Kraków (1995), Poland

Kuopio County, Finland Kutaisi, Georgia

Kuwait, Kuwait

La Habana, Cuba

Lappland Area, Finland

Lattakia, Svria

Lima, Peru

Linköping, Sweden Lisbon, Portugal

Lome, Togo

Lucknow, India

Ludhiana, India

Maceió, Brasil Madras (2), India

Madras (3), India

Madrid, Spain Malta, Malta

Managua, Nicaragua

Manaus Amazonas, Brasil

Mantova, Italy

Marrakech, Morocco

Marseille, France Mérida, Mexico

Melbourne, Australia

Metro Manilla, Philippines



# The ISAAC Story



Mexicali Valley, Mexico

Milano, Italy

Monterrey, Mexico

Montevideo, Uruguay

Montpellier, France

Moscow, Russia

Muar, Malaysia

Mumbai (16), India

Mumbai (18), India

Mumbai (29), India

Munich, Germany

Münster, Germany Nagpur, India

Nairobi, Kenya

Nakorn Pathom, Thailand

Narva, Estonia

Nelson, New Zealand

Netherlands, Netherlands

Netherlands (Utrecht), Netherlands

Neuquén, Argentina

New Delhi (7), India

Neyveli, India

Nis, Serbia And Montenegro

Niue Island, Niue

North east and Yorkshire, United Kingdom

North Gaza, Palestine

North Thames, United Kingdom

North West, United Kingdom

Nouvelle Caledonie, Nouvelle Caledonie

Nova Iguaçu, Brasil

Novi Sad, Serbia And Montenegro

Novosibirsk, Russia

Nuku alofa, Tonga

Orissa, India

Östersund, Sweden

Palermo, Italy

Pamplona, Spain

Panevezys, Lithuania

Passo Fundo, Brasil

Paysandú, Uruguay

Perth, Australia

Pessac, France

Pichincha, Ecuador

Pimpri, India

Podgorica, Serbia And Montenegro

Polokwane, South Africa

Polynesie Francaise, French Polynesia

Port-Gentil, Gabon

Portimao, Portugal

Porto, Portugal

Porto Alegre, Brasil

Poznan, Poland

Provincial Korea, South Korea

Pune, India

Punta Arenas, Chile

Quito, Ecuador

Rabat, Morocco

Ramallah, Palestine Rarotonga, Cook Islands

Rasht, Iran

Rasta Peth, India

Recife, Brasil

Rep. Of Ireland, Republic Of Ireland

Reunion Island, Reunion Island

Reykjavik, Iceland

Riga, Latvia

Rijeka, Croatia

Roma, Italy

Rosario, Argentina

Rosario City, Argentina

Rural Kharkiv, Ukraine

Rural Latvia, Latvia

Rural Santa Maria, Brasil

Salta, Argentina

Salvador, Brasil

Salzburg, Austria

Samarkand, Uzbekistan

San Pedro Sula, Honduras

San Salvador, El Salvador

San Sebastián, Spain

Santa Cruz, Bolivia

Santa Maria, Brasil

Santo Andre, Brasil

São Paulo, Brasil

São Paulo West, Brasil

Sarasota, Usa

Saskatoon, Canada

Scotland, United Kingdom

Seattle, Usa

Semarang, Indonesia

Seoul, South Korea

Shanghai, China

Siauliai, Lithuania

Siena, Italy Singapore, Singapore

Skopje, Republic Of Macedonia

Sofia, Bulgaria

Sombor, Serbia And Montenegro

Sousse, Tunisia

South and West, United Kingdom

South Santiago, Chile

South Thames, United Kingdom

Sri Lanka, Sri Lanka

St Augustine, Trinidad And Tobago

Stockholm/Uppsala, Sweden

Strasbourg, France

Sunderland, United Kingdom

Surrey/Sussex, United Kingdom

Suva, Fiji

Svábhegy, Hungary

Sydney 13-14, Australia

Sydney 6-7, Australia

Szeged, Hungary

Taipei, Taiwan

Tallinn, Estonia Taoyuan, Taiwan

Tartous, Syria

Tashkent, Uzbekistan

Tbilisi, Georgia

Tehran, Iran

Thessaloniki, Greece

Tibet, China

Tiranë, Albania

Tobago, Trinidad And Tobago

Tochigi, Japan

Tokelau, Tokelau

Toluca, Mexico

Tong Zhou, China

Torino, Italy

Trent, United Kingdom

Trento, Italy

Tromsø, Norway

Turku and Pori County, Finland Urban Cote d Ivoire, Cote D'Ivoire

Urfahr-Umgebung, Austria

Uruguaiana, Brasil

Valdivia, Chile

Valencia, Spain Valladolid, Spain

Vancouver, Canada

# THE

## The International Study of Asthma and Allergies in Childhood

# The ISAAC Story



#### Centres cont.

Verona, Italy
Villahermosa, Mexico
Viterbo, Italy
Vitória da Conquista, Brasil
Wales, United Kingdom
Wellington, New Zealand
West Algiers, Algeria
Wilaya of Algiers, Algeria
West Marne, France
West Midlands, United Kingdom
West Sussex, United Kingdom
Wulumuqi, China
Yaounde, Cameroon
Zanjan, Iran

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# The ISAAC Story



1.96 million children

306 research centres

105 countries

53 languages

>500 publications

>20 years of research





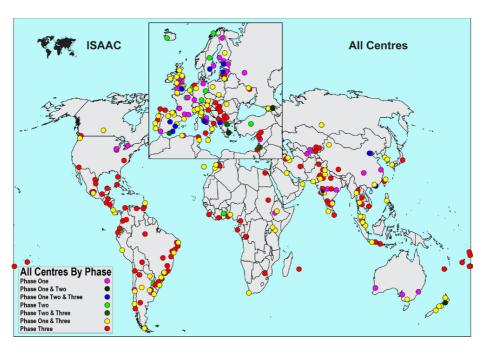
Welcome to the ISAAC Story, a website presentation of the history and findings of the International Study of Asthma and Allergies in Childhood. The story can be explored online through the menus on this website.

This is the story of a unique global collaboration, sustained over more than twenty years through the enthusiasm of contributing research groups, the generosity of numerous funding agencies, and the goodwill of parents and children, schools, hospitals and universities around the world. We take this opportunity to thank all of them most sincerely for their invaluable contributions to ISAAC.

Few scientific studies can claim a place in the Guinness Book of World Records. ISAAC is one of them. Detailed information about the results from ISAAC and access to ISAAC datasets can be found at the ISAAC website.

The ISAAC Story is dedicated to the memory of Stephan Weiland, a founder member of the consortium, who led the development of ISAAC Phase Two until his untimely death in March 2007.





### Editors Introduction

Contributors
Tribute to
Stephan Weiland





# The ISAAC Story



#### **Contributors**

# **Contributors**

### **ISAAC Executive**

Name	Years
Innes ASHER	1993-present
Richard BEASLEY	1993-1998 2000-2003
Bengt BJÖRKSTÉN	1997-2007
Luis GARCIA-MARCOS	2007-present
Neil PEARCE	1999-present
David STRACHAN	1993-present
Stephan WEILAND	1997-2007

## **ISAAC Steering Committee**

Name	Years
Nadia AÏT-KHALED	1999-present
Gabriel ANABWANI	1993-1999
Ross ANDERSON	1991-present
Innes ASHER	1991-present
Richard BEASLEY	1992-present
Bengt BJÖRKSTÉN	1993-present
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Michael BURR	1991-2002
Julian CRANE	1991-present
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Carsten FLOHR	2008-present
Sunia FOLIAKI	2001-present
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Luis GARCIA-MARCOS	2006-present
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Javier MALLOL	1993-present
Fernando MARTINEZ	1991-2004
Ed MITCHELL	1991-present
Stephen MONTEFORT	1994-present
Joseph ODHIAMBO	1999-present
Neil PEARCE	1991-present
Colin ROBERTSON	1991-present
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Dr Toakase Fakakovi Tonga
Dr Margarita Figueroa Colorado El Salvador
Dr Francesco Forastiere Italy
Professor Luis García-Marcos Spain

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Dr Maia Gotua Georgia
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Dr Kirthi D Gunasekera Sri Lanka
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Editors Introduction

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Tribute to



# The ISAAC Story



Editors Introduction

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Dr Györgyi Zsigmond Hungary

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Dr Emmanuel OD Addo-Yobo
Phase Two: Kintampo
Dr Omer Adzovic
Phase Three: Podgorica
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Phase Three: South Santiago

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Riyami

Dr Oscar Aldrey Phase Three: Caracas

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Scotland, South and West, South Thames, Trent, Wales, West Midlands, Phase

Three: North Thames, South Thames

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Professor Tamara Aripova Phase One: Samarkand, Tashkent

Dr Gustavo Aristizábal Phase Three: Bogotá
Dr Lucio Armenio Phase Three: Bari

Dr Alberto Arnedo-Pena Phase One: Castellón, Phase Three: Castellón Professor Innes Asher Phase One: Auckland, Phase Three: Auckland

Dr Jane B Austin Phase Three: Scotland
Professor Shally Awasthi Phase Three: Lucknow

Dr Carlos E Baena-Cagnani Phase One: Córdoba, Phase Three: Córdoba

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Prof Dr Karnen Baratawidjaja Phase One: Bandung
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Dra Mercedes Barragán-Meijueiro Phase Three: Ciudad de México (3)

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Dr José Batlles-Garrido Phase Two: Almeria, Phase Three: Almeria

Professor Adrian Bauman Phase One: Sydney 13-14
Dr Luis Alberto Vera Benavides Phase Three: Calama

Professor Badia Benhabylès Phase One: West Algiers, Phase Three: Wilaya of Algiers

Professor Abedelkrim Bennis Phase One: Rabat



# The ISAAC Story



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Bernhardt

Dr Patricia Gomes M Bezerra Phase One: Recife
Dr A Bezzaoucha Phase One: Algiers
Associate Professor Sheila Bhave Phase Three: Rasta Peth
Dr Zulfiqar A Bhutta Phase One: Karachi

Dr Marco Biocca Phase One: Emilia-Romagna

Dr Luigi Bisanti Phase One: Milano, Phase Three: Milano
Professor Alfredo Blanco-Quirós Phase One: Valladolid, Phase Three: Valladolid
Professor Jurgis Bojarskas Phase One: Kaunas, Phase Three: Panevezys, Siauliai

Phase Three: Itajaí

Dr Enea Bonci Phase One: Cosenza, Phase Three: Cosenza

Professor Attilio Boner Phase One: Verona
Professor Sergio Bonini Phase One: Ascoli Piceno
Dr Fernando D Borges Phase One: Funchal
Dr Wellington G Borges Phase Three: Brasília

Professor Zoubida Bouayad Phase One: Casablanca, Marrakech, Phase Three: Benslimane, Boulmene,

Casablanca, Marrakech

Associate Professor Anna

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### The International Study of Asthma and Allergies in Childhood

# The ISAAC Story



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# The ISAAC Story





### In Memoriam of Professor Dr Med Stephan Weiland

Professor Dr Med Stephan KM Weiland, 25 December 1958 to 19 March 2007. Professor of Epidemiology, Head of the Institute of Epidemiology, University of Ulm, Coordinator of Phase Two of the International Study of Asthma and Allergies in Childhood (ISAAC) and Executive member of the ISAAC Steering Committee.

Stephan, our much loved friend and colleague, died suddenly and unexpectedly on the 19th March 2007. Stephan was one of the founding members of ISAAC and made an enormous contribution to the scientific development of the study through his long service on the ISAAC Executive and as Phase Two Coordinator. Indeed, without Stephan's leadership, stamina and diplomatic skills, there would probably have been no ISAAC Phase Two. Above all, he cared about people and dedicated his life to health

prevention and health promotion, especially asthma and allergies in children.

Stephan was born and grew up in North-West Germany. He went to medical school in Cologne (1978-1985) and obtained his MD degree in 1987. During this time he became interested in the prevention of disease at a population level. This took him to McGill University in Montreal where he graduated in 1989 with a Masters degree in Epidemiology. He then joined the University of Bochum as assistant professor where he developed an interest in environmental and occupational epidemiology. He was a key individual in the archetypal studies that uncovered unexpected differences in the prevalence of asthma between Western Germany and the recently liberated and heavily polluted East. He moved with Professor Ulrich Keil's department to Münster in 1993, and four years later was promoted to Associate Professor. In 2002, Stephan moved to Ulm, in southern Germany, to take up the Chair of Epidemiology and set up a new Institute of Epidemiology. This took him closer to the mountains which he had loved since he was a young boy. He was an active hiker, climber and skier and enjoyed these outdoor activities whenever he was able to escape from his heavy workload and responsibilities.

Stephan was an outstanding unit director, an internationally respected scientist and an integral member of the ISAAC Steering Committee. Stephan promoted the idea that the ISAAC partnership should be used to investigate specific factors predisposing to asthma, and led the formation of ISAAC Phase Two with that aim. His coordination of 33 ISAAC Phase Two centres in 22 countries and his leadership of a successful application to European Union Fifth Framework Programme led to the establishment of the ISAAC Phase Two Data Centre in Ulm under his direction. Shortly before he died, Stephan received the good news that the first of a series of papers from Phase Two had been accepted for publication, showing how the relationship between atopy and asthma differs between centres in affluent and less affluent countries. A number of papers have followed, due to the research momentum he established in Ulm.

Stephan's welcoming smile, warm compassion and lively sense of humour will be greatly missed, but always remembered – he will be forever part of ISAAC. To us we have lost a great friend and collaborator. To Epidemiology, we have lost a great scientist. Our hearts go out to his family.

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