

# Contents

Preface

Foreword

Contributors

- Clinical Overview: The Changing Pattern of Clinical Aspects of Allergic Diseases: *Y. Vandenplas*
- Changing Definitions of Allergy: *C. Bindselev-Jensen*
- The Changing Prevalence and Clinical Profile of Food Allergy in Infancy: *D.J. Hill, R.G. Heine, C.S. Hosking*
- The Hygiene Hypothesis: Modulation of the Atopic Phenotype by Environmental Microbial Exposure: *P.G. Holt*
- Allergy: Is It a Th2-Predominant Disease? Pro: *S. Romagnani*
- The Induction of Immunoregulation Prevents the Development of Immunopathology in Chronic Helminth Infections and Allergy: *A.H.J. van den Biggelaar, M. Yazdanbakhsh*
- Mechanisms Governing Non-Responsiveness to Food Proteins: *C. Nagler-Anderson, W.A. Walker*
- Oral Tolerance and Gut Maturation: *S. Murch*
- The Role of Bacteria in the Development of Intestinal Protective Function: *N.N. Nanthakumar, W.A. Walker*
- Human Colonic Microbes: Ecology, Physiology and Metabolic Potential of Intestinal Bacteria: *G.T. Macfarlane, S. Macfarlane*
- Does Breast-Feeding Protect from Allergies?: *R.L. Bergmann, K.E. Bergmann, J.W. Dudenhausen*
- Protective Nutrients and Gastrointestinal Allergies: *C. Duggan*
- Identification of Probiotics and Prebiotics with Antiallergenic Properties: *S. Salminen, E. Isolauri*
- Can We Prevent the Allergic Child from Becoming a Chronic Asthmatic Adult?: *A.H. Liu*
- The German Infant Nutritional Intervention Study (GINI): A Model for Allergy Prevention: *A. von Berg*
- Novel Approaches for the Nutritional Management of the Allergic Infant: *E. Isolauri*

Concluding Remarks

Subject Index

Nestlé Nutrition Workshop Series  
Pediatric Program, Vol. 53  
**Allergic Diseases and the Environment**  
Editors: Isolauri, E. (Turku),  
Walker, W.A. (Boston)  
XVI + 324 p., 19 fig., 31 tab.,  
hard cover, 2004  
CHF 228.- / EUR 163.- / USD 198.25  
ISBN 38055-7649-8

Prices subject to change  
EUR price for Germany,  
USD price for USA only

## *Proceedings of the 53rd Nestlé Nutrition Workshop, Pediatric Program*

### **Nestlé Nutrition Workshop Series Pediatric Program, Vol. 53**

# Allergic Diseases and the Environment

Editors

**Erika Isolauri,  
W. Allan Walker**



During the last two decades the increase in allergic diseases in children, such as atopic dermatitis and asthma, has been drastic. However, this is not true for the entire world: the incidence of allergies in children has risen only in developed countries. The observation of this socio-geographic discrepancy has led to careful study of the environmental differences that exist between the diverse settings in which children are born and has resulted in the so-called 'hygiene hypothesis': the 'sterility' of modern hospitals and birth places in the developed world might lead to a lack of microbial stimulation required for the development of a balanced mucosal immune response, including expansion of T-helper (Th) cell subsets that can mediate immune responses. Therefore, this workshop was held to consider in depth the environmental factors that influence the changing pattern of worldwide childhood allergy.

This publication is a valuable source of knowledge and update for nutritionists, pediatricians, immunologists, microbiologists, as well as professionals concerned with preventive medicine.

**Fields of Interest:**

Allergy, Nutrition, Gastroenterology,  
Immunology, Microbiology,  
Pediatrics, Preventive Medicine

[www.karger.com/nepep](http://www.karger.com/nepep)

**KARGER**

# Nestlé Nutrition Workshop Series



## Pediatric Program

ISSN 0742-2806

In 1981, 'Nestlé Nutrition' was created with the aim of improving and disseminating knowledge on health and nutrition, as well as providing scientific information to the medical profession. Initially, 'Nestlé Nutrition' consisted of the present book series 'Nestlé Nutrition Workshop Series: Pediatric Programme', which since 1997 has been extended to include also the 'Nestlé Nutrition Workshop Series: Clinical & Performance Program'. Both book series are now available at S. Karger Scientific Publisher's. One of the major components of these series is the organization of workshops and the publication of the proceedings. Each workshop focuses on the latest findings, the controversies and further research needs concerning topics in nutrition.

The next edition resulting from the 'Nestlé Nutrition Workshop Series: Pediatric Programme' will be:

- No. 54. Micronutrient Deficiencies during the Weaning Period and the First Years of Life

The books of this series will be of great assistance to pediatricians, clinical investigators, health workers and nutritionists concerned with pediatric health and nutrition.

Also available:



**Vol. 52**  
**Micronutrient Deficiencies  
in the First Months of Life**  
Editor: Delange, F. (Brussels);  
West, K.P., Jr. (Baltimore, Md.)  
XIV + 370 p., 25 fig., 45 tab., hard cover, 2003  
CHF 228.- / EUR 163.- / USD 198.25  
ISBN 3-8055-7559-9

Prices subject to change  
EUR price for Germany, USD price for USA only

**KARGER**

## Order Form

### Nestlé Nutrition Workshop Series Pediatric Program

Please send:

\_\_\_ copy/ies: Vol. 53 **Allergic Diseases and the Environment**  
CHF 228.- / EUR 163.- / USD 198.25  
ISBN 3-8055-7649-8

\_\_\_ copy/ies \_\_\_\_\_  
ISBN 3-8055-\_\_\_\_\_

- The book series **Nestlé Nutrition Workshop Series Pediatric Program** on continuation beginning with Vol. 52

All Karger series are available on continuation. Each new publication will be sent upon publication until order is countermanded.

Postage and handling free with prepayment

For easy ordering or information about other Karger publications log on to:  
[www.karger.com](http://www.karger.com)

#### Payment:

- |   |   |
|---|---|
| <input type="checkbox"/> Check enclosed   | <input type="checkbox"/> Please bill me |
| <input type="checkbox"/> Please charge to |   |
| <input type="checkbox"/> my credit card   |   |
| <input type="checkbox"/> American Express | <input type="checkbox"/> Diners         |
| <input type="checkbox"/> Eurocard         | <input type="checkbox"/> MasterCard     |
| <input type="checkbox"/> Visa             |   |

Card No.: \_\_\_\_\_

Exp. date: \_\_\_\_\_

Name/Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date: \_\_\_\_\_

Signature \_\_\_\_\_

Orders can be placed at agencies, bookstores, directly with the publisher, or with any Karger distributor.

**S. Karger AG, P.O. Box, CH-4009 Basel (Switzerland)**

Fax +41 61 306 12 34, E-Mail [karger@karger.ch](mailto:karger@karger.ch)

**USA:** S. Karger Publishers, Inc., 26 West Avon Road, P.O. Box 529, Farmington, CT 06085, Toll free: 1-800-828-5479

**Germany:** S. Karger GmbH, Lörracher Str. 16A, D-79115 Freiburg

**France:** Librairie Lugrinbühl, 36, bd de Latour-Maubourg, F-75007 Paris

**United Kingdom, Ireland:** S. Karger AG, 4 Rickett Street, London SW6 1RU (UK)

**Baltic States:** Klanberg Ltd., Jääraku 67, EE-12015 Tallinn (Estonia)

**Gulf Council Countries, Iran, Middle East,**

**North Africa, Turkey:** Trans Middle East Internat. Distribution Co. Ltd., KaSha, P.O. Box 2376 Telaa' Al-Ali, Amman 11953 (Jordan)

**ASEAN countries, Hong Kong, Taiwan, South Korea:**

APAC Publishers Services Pte. Ltd., 31, Tannery Lane, #07-01 Dragon Land Building, Singapore 347788

**India, Bangladesh, Sri Lanka:**

Panther Publishers Private Ltd., 33, First Main, Koramangala First Block, Bangalore 560 034 (India)

**Japan:** Karger Japan, Inc., Yushima S Bldg. 3F,

4-2-3 Yushima, Bunkyo-ku, Tokyo 113-0034

**Australia:** DA Information Services, 648 Whitehorse Road, P.O. Box 163, Mitcham, Vic. 3132