The Right to Breathe Healthy Indoor Air in Schools
This publication is dedicated
to the late EFA President Kerstin Hejdenberg

Edited by: Mariadelaide Franchi, EFA Editor
Production by: Jean Ann Gilder, Scientific Communication

The right to breathe healthy indoor air in schools
Extracted from the EFA report
‘Indoor Air Pollution in Schools’, 2001

The project received financial support from the European Commission. The European Commission is not liable for any use made of the information contained herein.
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The last half of the 20th century has seen an increase in allergic diseases worldwide, and children are particularly affected by this ‘epidemic of the third millennium’. One of the major concerns of EFA is to identify measures that can help to halt or slow down the increasing trend in allergy and asthma.

At the end of 1999 EFA received a grant from the European Commission for a project entitled ‘Indoor Air Pollution in Schools’. The aim of the project was to compile an overview of literature data, and governmental and other initiatives relating to indoor air in schools, and to make recommendations for a healthy school environment. These recommendations, made by a multidisciplinary panel of experts based on the data collected, are distilled in this leaflet. The complete report is available from the EFA Secretariat.

Indoor air pollution in schools emerges as a real problem, but a problem for which there are various solutions. However, local initiatives will not have a lasting impact. In fact, the general consensus arising from this study is that the complex issue of indoor air pollution in schools must be approached at a European and international level.

We hope that the recommendations and proposals sketched-out in this booklet will prompt action at national and European level to make schools a much healthier place for our children and for school staff in general.

Mariadelade Franchi
Erkka Valovirta MD
Project Coordinator
Acting EFA President
The European Federation of Asthma and Allergy Associations (EFA) was founded in Sweden in November 1991 upon the initiative of eight European countries (Finland, Iceland, Ireland, Norway, Poland, Sweden, The Netherlands and United Kingdom) with the aim of improving the health conditions and quality of life of people with asthma and allergy throughout Europe. The rationale being that a strong international organisation is the most effective means to serve the needs and safeguard the rights of patients and their families.

Today, EFA is an important patients’ network representing 250,000 individuals who are members of 33 associations in 17 European countries (Austria, Belgium, Czech Republic, Denmark, Finland, Germany, Hungary, Ireland, Italy, Norway, Portugal, Slovenia, Spain, Sweden, Switzerland, The Netherlands and United Kingdom).
More than 1 of every 3 children in Europe has asthma or allergy. These diseases are the major causes of days lost from school and their socio-economic costs cannot be overestimated. Children are in school for one-third of their normal day.

Various studies have shown that poor indoor air quality (IAQ) in schools interferes with learning activities and can cause discomfort, irritation, and various short- and long-term health problems in students, teachers and staff. Indoor pollutants can be particularly harmful for students already affected by allergies or asthma.

In this scenario, it is crucial that people working in schools and the relevant authorities are aware of the problem of indoor air pollution.

The ‘Indoor Air Pollution in Schools’ project was undertaken in an attempt to assess the magnitude of the problem and to provide recommendations for a healthy school environment.

**Aims**

- To collect information on air pollution in schools. The project looked at nursery, primary, and secondary schools in Europe, and focused on IAQ and its effects on asthma and allergy.
- To review indoor air pollution in school policies and programmes of European countries.
- To formulate recommendations and initiatives aimed at providing a healthy school environment.

The results should serve to design awareness campaigns directed at schools, builders, architects, physicians and the public-at-large.
Collection of data and information
Information on IAQ, ventilation, and building-related health problems in schools was collected from scientific publications identified from bibliographic databases. The Internet was scanned for relevant documents, and recommendations, initiatives, policies and programmes aimed at providing a healthy school environment. A questionnaire, designed to collect information about reports, research programmes and policies on indoor air pollution in schools, and on initiatives aimed at providing a healthy school environment, was distributed in European countries through the EFA member associations’ network, as well as overseas.

In summary, the data collected was of three types:
- IAQ data on schools.
- Health effects related to IAQ in schools.
- Policies and special programmes of European countries concerning indoor air pollution in schools.

Consensus on recommendations and practical initiatives in relation to indoor air pollution in schools
The ultimate aim of the project was to reach a consensus on recommendations and practical initiatives in relation to indoor air pollution in schools to present to the European Commission and to national governments.

The report was approved in November 2000 by the EFA board, the project Scientific Committee and EFA’s project partners. It was concluded that indoor air quality in schools should be recognised as a priority topic for public health. There is a need for a global approach including a multidisciplinary European Programme on Indoor Air Quality, with the emphasis on schools, that aims at encouraging and co-ordinating actions in the fields of research, legislation, prevention, education, information, and training.
Indoor air quality in schools should be recognised as a priority topic for public health

School buildings are used by a large number of people for a long time of their day. There are slightly more than 71 million students and nearly 4.5 million teachers in the primary and secondary schools in the EU, representing more than 20% of the total population. In half of the European countries, children spend over 800 hours a year in class, that is about one-third of their typical day. No child should risk becoming ill or having exacerbation of symptoms because of the air quality in the school environment.

Asthma, allergy and airway hyperreactivity are increasing throughout Europe and at least one child in three is affected by this type of disorder.

Asthmatic children are most often hyperreactive to a number of gases and particles. Furthermore, asthmatics are most often sensitive to allergens present in excessively high amounts in schools. There is evidence of a worldwide increase in morbidity and mortality for asthma and allergies, particularly in western countries. The rate of increase in asthma prevalence is too rapid to be due to changes in the genetic pool. It has been suggested that this increase may primarily be due to an increase in exposure to allergens in the modern indoor environments.

Indoor allergen exposure is recognized as being the most important risk factor for asthma in children, in particular for sensitisation during the first years of life. The indoor environment in general can give symptoms of a non-specific nature,
which is known as ‘sick-building syndrome’. The building, not the patients/children are diagnosed by questionnaires sent to the inhabitants/schoolchildren/school staff. Asthmatic children function as the most sensitive biological sensors in such cases.

Indoor air quality in schools has been much less studied than IAQ in other buildings (e.g. offices and other workplaces). In fact, scarce attention has been given to IAQ in schools, the related health effects, and the effectiveness of remedial measures in European schools.

The studies available show that schools frequently have severe indoor problems because of poor building construction and maintenance, poor cleaning and poor ventilation; in addition, high levels of volatile organic compounds, allergens and moulds (humidity) are frequent.

Other studies have shown that the IAQ in schools can cause various short- and long-term negative health effects and discomfort in students, teachers and other school staff.

Children are more sensitive to indoor pollutants than adults. In effect they react more readily to air pollution and breathe a greater volume of air relative to their body weights than adults do. Also, many children breathe through their mouths, bypassing the nasal passages’ natural defences.

The school environment is compulsory; children cannot make decisions concerning their own (school) environment because they are placed at a school and did not choose it themselves. This should put an obligation on school authorities to provide an environment that is appropriate also for children with allergy or other kinds of hypersensitivity. Schools should be adapted towards the benefit of asthmatic and/or allergic children.
A general consensus on the implementation of guidelines for IAQ in schools can be found in the report of the International Society on Indoor Air Quality and Climate-ISIAQ, ‘Creation of Healthy Indoor Environment in Schools - Guidelines for Indoor Air Quality in Schools’. These Guidelines can be considered a general framework applicable to the diverse national and regional situations. They are included in the full report of this project, and can be obtained from http://www.isiaq.org.

- Avoidance of environmental tobacco smoke.
- Avoidance of moisture/moulds in the building.
- Avoidance of allergen sources.
- Adequate cleaning and maintenance, practical shaping of the interior to facilitate cleaning and maintenance.
- Good control of the maintenance of heating and ventilation to ensure a satisfactory temperature and ventilation in the classroom.
- Adequate periodical monitoring of the IAQ parameters in schools.
- Appropriate training of students, teachers and school staff who are responsible for management, maintenance and cleaning.
The right to breathe clean air in schools should be recognised as a fundamental health right at all levels: by the European Commission, the Health, Environment and Education authorities in the Member States, and the scientific societies and professional organisations involved in this topic, and also by school staff, students, and the public at large.

There is a need for a multidisciplinary European Programme on Indoor Air Quality, with the emphasis on schools, that aims at encouraging and co-ordinating actions in the fields of research, legislation, prevention, education, information, and training. The main objectives of the Programme in the specific sector of schools should be to obtain regulations to ensure a safe and healthy environment and generalised health control of schoolchildren in Europe, and to promote awareness campaigns aimed at children and their families, school staff, policy decision makers, health professionals and the public.

Research is needed to develop sustainable measures to improve IAQ in school buildings, to evaluate the impact of IAQ in schools on health and its effects on learning and life style of children, to determine the impact of tobacco smoke exposure at school and its health effects, and to develop specific IAQ standards and guidelines for schools. In addition, implementation of epidemiological methodology is also required.
Patients’ associations and professional organisations play a very important role within this European strategy. They must increase public awareness, inform, educate and help both the public and those affected by asthma, allergy and hypersensitivity, and bring pressure to bear on their governments to take and encourage more co-ordinated action at national level.

In the absence of national projects, the larger patients’ associations have developed their own plans and actions and those with significant resources also make important contributions to professional training and research. There is clearly considerable scope for action at European level to foster the exchange of experience and expertise between patients’ associations, thereby helping the smaller associations to make a more effective contribution to good IAQ. The main actions taken by patients’ and professional organisations have been to improve public awareness and knowledge of this topic, to provide patients with support, education and practical assistance, to provide training and guidance for the various professions involved and to support research and surveys. The actions are implemented through publications and use of the media, telephone helplines, exhibitions, training courses and conferences, on the basis of a close collaboration with employers and education authorities.
Project Team

Project Co-ordinator
Mariadelaide Franchi

EFA Board
Erkka Valovirta, Acting President
Arne Heimdal, Secretary
Elisabeth Bell, Treasurer
Antonio Spanevello, Member-at-large
Otto Spranger, Substitute member
Antonio Parra Arrondo, Substitute member

Scientific Committee
Jean Bousquet, Global Initiative for Asthma (GINA) Group
Annelies van Bronswijk, AllSan-IT
Sten Dreborg, European Society for Pediatric Asthma & Clinical Immunology (ESPA CI)
Jorrit Gerritsen, European Respiratory Society (ERS)
Marco Maroni, International Society of Indoor Air Quality & Climate (ISIAQ)
Paolo Matricardi, European Academy of Allergology & Clinical Immunology (EAACI)
Edith M.A.L. Rameckers, AllSan-IT
Olli Seppänen, Federation of European Heating and Air-Conditioning Associations (REHVA)
Erkka Valovirta (EFA)
Giovanni Viegi, European Respiratory Society (ERS)

Consultants
Yuri Bruinen de Bruin, Dept. Occupational Health, University of Milan
Paolo Carrer, Dept. Occupational Health, Istituti Clinici di Perfezionamento, Hospital and University of Milan

Secretariat management
Jean Ann Gilder, Scientific Communication, Naples

EFA Partners
Allergia-Ja Astmaliitto, Finland
APA-Associação Portuguese de Asmáticos, Portugal
Asociación Gallega de Asmáticos y Alergicos (ASGA), Spain
Asthma Society of Ireland, Ireland
Asta-Allergiforbundet, Denmark
Astmafonds, Belgium
Asta och Allergy Förbundet, Sweden
Asztmás Betegek Országos Szövetsége-ABOSZ, Hungary
Ceska iniciative pro astma, Czech Republic
Deutscher Allergie-und AsthmaBund e.V, Germany
Federasma, Italy
INSERM, Hôpital Arnaud de Villeneuve, Montpellier, France
Nederlands Astma Fonds, The Netherlands
Norges-Astma -og Allergiforbund, Norway
Österreichische Lungen-Union, Austria
EFA is indebted to the following persons for their contributions to the project.

Norbert Vetter, Österreichische Lungen-Union, Austria
Paul A. Vermeire, Astmafonds, Ghent, Belgium
Jytte Grove, Astma-Allergi Forbundet, Glostrup, Denmark
Vivian Raesmusssin, WHO Regional Office for Europe, Copenhagen, Denmark
Susanna Palkonen and Risto Ruotsalainen, Allergia-ja Astmalitto, Helsinki, Finland
Ulla Haverinen, KTL, National Public Health Institute, Laboratory of Environmental Microbiology, Kuopio, Finland
Matti Jantunen, KTL, National Public Health Institute, Department of Environmental Health, Kuopio, Finland
Florence Trebuchon, Hôpital Arnaud de Villeneuve, Montpellier, France
Laszlo Endre, Asztmás Betegek Országos Szövetsége-ABOSZ, Hungary
Genie Hennessy, Asthma Society of Ireland, Dublin, Ireland
Anna Maria De Martino, Health Ministry, Department of Prevention, Rome, Italy
Alessandra Fabbri, APTA, Pistoia, Italy
Paola Minale, Allergology Unit, S. Martino Hospital, Genoa, Italy
Francesco Forastiere, Health Public Agency Lazio Region, Rome, Italy
Gianna Moscato, Salvatore Maugeri Foundation, Pavia, Italy
Cor Pernot, Centre for Building & Systems TNO-TUE, Eindhoven, Netherlands
Finn Levy, Department of Occupational Health, Ullevaal University Hospital, Norway
Rosado Pinto and Paula Leiria Pinto, Hospital Dona Estafânia, Lisbon, Portugal
Manuel Ferreiro Arias and Marte Almanza Lista, Asociación Gallega de Asmáticos y Alergicos, La Coruña, Spain
Marie-Louise Lüther, Astma och Allergy Förbundet, Stockholm, Sweden
Eva Falk, National Institute of Public Health, Sweden
Ramona Trovato, Environmental Protection Agency, USA

EFA is also grateful for the support given to this project by GlaxoWellcome and 3M.
AUSTRIA
Österreichische Lungen-Union
Obere Augartenstrasse 26-28
A-1020 Wien
Tel. +43 1 330 42 86. oelu@mat.at

BELGIUM
Contact for Belgian associations:
efa.belgium@euronet.be

ASTMAFONDS
Grauwpoort 9, 9000 Gent
Tel/Fax +32 9 225 65 05
Astmastichting Belgie v.z.w.
Heuvelholf 1, 3010 Kessel-Lo
Tel. +32 16253111

AIR Ste-Ode
C-H de Ste-Ode
6680 Ste-Ode
Tel. +32 8 42 25 282

Allergie Prevenzione
Sint-Anna 38
8500 Kortrijk
Tel. 056 258916; Fax 056 258916

F.A.R.E.S.
Rue de la Concorde 56
1050 Brussels
Tel. 02 5122936; Fax 02 5123273

Fondation pour la Prevention des
Allergies
Rue de la Concorde 56
1050 Brussels
Tel. 02 5116761; Fax 02 5116761

CZECH REPUBLIC
Czech Initiative for Asthma
Sokolská 31, 12000 Praha 2
Tel/Fax 420 224266229
cipa@volny.cz
www.cipa.cz

DENMARK
Asthma-Allergi Forbundet
Hovedvejen 9C, 2600 Glostrup
Tel. +45 4 3435911
Fax +45 43435433
ig@astma-allergi.dk
www.astma-allergi.dk
www.astma-allergi.net.

FINLAND
Allergia-ja Astmaliitto
Pacuksenkatu 19
00270 Helsinki
Tel. +358 9 473 35303
Fax +358 9 473 353 80
allergia.astmaliitto@allergia.com
www.allergia.com

GERMANY
Deutscher Allergie-
und Asthmabund e.V.
Hindenburgstrasse 110
D-41 061 Monchengladbach
Tel. +49 2161 8149 40
Fax +49 2161 8149 430
info@daab.de; www.daab.de

AAK e.V. Bundesverband
Haupstrasse, 29
W-6348 Herborn
Tel. +49 277 292 870
Fax +49 277 292 8748

Deutscher Neurodermitiker Bund e.V
Haus Hammaburg
Spaldingstrasse 210
20097 Hamburg
Tel. +49 40 230810
Fax +49 40 231008
www.dnb-ev.de

HUNGARY
Hungarian Soc. of Allergology and
Clinical Immunology
Nat. Inst. Rheumatology,
POB 54
H-1525 Budapest 114
Tel/FaxTel. +36 1 335 0915

Hungarian Respiratory Society
POB 250
H-1536
Budapest 114
Tel/Fax +36 13 55 86 82

National Society
of Asthmatic and Allergic Patients
in Hungary (ABOSZ)
Szoboszlai utca 2-4
H-1126 Budapest
Tel/Fax +36 26 389 774

IRELAND
Asthma Society of Ireland
Eden House
15-17 Eden Quay
Dublin 1
Tel. +353 1 878 8511
Fax +353 1 878 8128
asthma@indigo.ie

ITALY
FEDERASMA
c/o Fondaz. Salvatore Maugeri
via Roncaccio, 16
I-21049 Tradate (Varese)
Tel/Fax +39 0331 829667
federasma@fsm.it
www.federasma.org

NORWAY
Norges Astma- og Allergiforbund
Hegdehaugsveien 31, 0352 Oslo
Tel. +47 22 933 730
Fax +47 22 933 750
www.naaf.no
PORTUGAL
APA-Associacão Portuguesa de Asmaticos
Rua Arnaldo Gama 74-2°
4000 Porto
Tel/Fax. +351 2 332 6212
www.ciberconceito.com/apa/indeks.htm

SLOVENIA
Pulmonary Patients' Association of Slovenia, Pliučni dispancer Vic
Postojnska 24, 61000 Ljubljana
Tel/Fax +386 61 2004508
dbps@siol.net

SPAIN
Asociación Gallega de Asmáticos
Alcade Abella, 24-bajo
15002 La Coruña
Tel/Fax +34 981 228008
apaO1lu@nacom.es

SWEDEN
Astma och Allergi Förbundet
S:t Eriksgatan 44, 5tr, Box 49303
S-100 29 Stockholm
Tel. +46 8 506 282 00
Fax +46 8 506 282 49
info@astmaallergiforbundet.se
www.astmaallergiforbundet.se

SWITZERLAND
aha! Das Band - Schweizerisches Zentrum für Allergie, Haut und Asthma
Gryphenhübeliweg 40
Postfach, 3000 Bern 6
Tel. +41 31 352 11 38
Fax +41 31 351 61 85

United Kingdom
National Eczema Society
163 Eversholt Street
London NW1 1BU
Tel. +44 171 388 40 97
Fax +44 171 388 58 82
www.eczema.org

British Allergy Foundation
Deepdene House
30 Bellegrove Road
Welling, Kent DA 16 3PY
Tel. +44 181 3038525
Fax +44 181 3038792
www.allergyfoundation.org.uk

THE NETHERLANDS
Nederlands Astma Fonds
Speelkamp 28
Postbus 5
3830 AA Leusden
Tel. +31 33 434 12 36
Fax +31 33 43 412 99
tijis.rolle@astmafonds.nl
www.astmafonds.nl

Voedingscentrum Team Voeding & Zorg
Postbus 85700
2508 CK Den Haag
Tel. +31 70 306 88 95
Fax +31 70 350 42 59
allergieteleefoon@vc.agro.nl
www.voedingscentrum.nl

Landelijke Cara Patiëntenvereniging
van Slingelandstraat 34
4615 GV, Bergen op Zeem
Fax +31 31 164 840

Stichting Voedselallergie
Postbus 207
NL-3860 AE Nijkerk
Tel. +31 33 46550
Fax +31 33 4654965
info@stichtingvoedselallergie.nl
www.stichtingvoedselallergie.nl

Vereniging voor Mensen met Constitutioneel Eczem (VMCE)
Speelkamp 28
NL-3831 PE Leusden
Tel. +31 26 3514160
PAM.Zweekhorst@gironet.nl
www.huidfederatie.nl/vmce

UNITED KINGDOM
National Asthma Campaign
Providence House
Providence Place
London N1 ONT
Tel. +44 171 226 22 60
Fax +44 171 70 407 40
www.asthma.org.uk

Voedingscentrum Team Voeding & Zorg
Postbus 85700
2508 CK Den Haag
Tel. +31 70 306 88 95
Fax +31 70 350 42 59
allergieteleefoon@vc.agro.nl
www.voedingscentrum.nl

Landelijke Cara Patiëntenvereniging
van Slingelandstraat 34
4615 GV, Bergen op Zeem
Fax +31 31 164 840

Stichting Voedselallergie
Postbus 207
NL-3860 AE Nijkerk
Tel. +31 33 46550
Fax +31 33 4654965
info@stichtingvoedselallergie.nl
www.stichtingvoedselallergie.nl

Vereniging voor Mensen met Constitutioneel Eczem (VMCE)
Speelkamp 28
NL-3831 PE Leusden
Tel. +31 26 3514160
PAM.Zweekhorst@gironet.nl
www.huidfederatie.nl/vmce

UNITED KINGDOM
National Asthma Campaign
Providence House
Providence Place
London N1 ONT
Tel. +44 171 226 22 60
Fax +44 171 70 407 40
www.asthma.org.uk