



European Federation of
Allergy and Airways Diseases
Patients Associations



Towards Healthy Air in Dwellings in Europe.

Executive Summary

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The data reviewed and the recommendations made within the THADE project are condensed in this volume. The full reports compiled by the expert consultants can be accessed on the EFA website (www.efanet.org). See inside back cover for the CD containing the pollution mapping programme.



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Towards Healthy Air in Dwellings in Europe. *The THADE Report*

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PREFACE

Asthma and allergies are the most common chronic illnesses in children, and are among the most frequent chronic diseases overall in industrialised countries. Strikingly, cases of asthma and allergy have practically doubled over the past 15 years. The indoor environment has been implicated in this increase, and is known to be a major factor in asthma exacerbation. Indoor air pollution is a problem shared by most countries. We all live in houses and most of us work indoors, and spend more than 90% of our time in a building of one sort or another.

One of EFA's major concerns is to identify measures that can help to halt or slow down the increasing trend in allergy and asthma. It was in this light that EFA welcomed the opportunity afforded by the European Parliament and Council's programme of Community Action on Pollution-related Diseases to investigate indoor air pollution.

Following in the wake of the very successful 'Indoor Air Pollution in Schools' (2000) study, in 2002 EFA was awarded a grant by the European Commission (DG SANCO) for a project entitled 'Towards Healthy Air in Dwellings in Europe - THADE'. The aim of this far-reaching project was to compile an overview of evidence-based data about exposure to indoor air pollution and its health effects, particularly as regards allergies, asthma and other respiratory diseases such as chronic obstructive pulmonary disease (COPD); review cost-effective measures and technology to improve indoor air quality; review legislation and guidelines on indoor air pollution; and recommend an integrated strategy that defines appropriate indoor air quality policies for implementation in Europe.

This volume contains the information about air quality in dwellings and indoor environment-related diseases that has been collected by expert consultants within the framework of THADE and terminates with recommendations for actions that will improve indoor air quality. The full report of each expert consultant can be accessed from the EFA website: www.efanet.org

The data come from a wide variety of sources: EUROSTAT, national statistics agencies, and scientific societies such as the European Academy of Allergy and Clinical Immunology (EAACI), the European Respiratory Society (ERS), the European Federation of Heating and Air-conditioning Associations (REHVA), the Global Initiative for Asthma (GINA) and the International Society of Indoor Air Quality and Climate (ISIAQ). A questionnaire, completed predominantly by EFA member associations, was used to collect data on national legislation and policies. Various experts met at a Multidisciplinary Workshop in June 2003 to discuss and analyse the data collected. The recommendations for a healthy dwelling environment arising from the Workshop are included in this volume.

The results of the THADE project confirm that air pollution in dwellings is a real

health problem. It is a complex issue that must be approached at European and international level, and involves the medical profession, scientific societies, patients' organisations, lawmakers, architects, builders and the building industry as a whole, ventilation experts, etc.

The THADE project arose from an idea generated by Mariadelaide Franchi (EFA Honorary Member). Not only was she the co-ordinator of the project, she was the driving force throughout all the various phases. We are deeply indebted to Ms Franchi, without whom this project would not have been realized.

We hope that the THADE report will serve as a tool for all those at international, national, governmental and local level who are striving for healthy dwellings for European citizens.



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EXECUTIVE SUMMARY

Indoor air pollution may cause or aggravate illnesses, increase mortality, and have a major economic and social impact. Millions of Europeans spend more than 90% of their time indoors: at home, in the office, factory, school, restaurants, theatres, etc. What is the impact of poor air quality at home on health and what measures can be taken to improve it?

The THADE project was designed to address these two issues, and was funded by the European Commission within the Pollution-related Diseases programme. It was endorsed by the major scientific societies in this field: the European Academy of Allergology and Clinical Immunology (EAACI), European Respiratory Society (ERS), European Federation of Heating and Air-conditioning Associations (REHVA), Global Initiative on Asthma (GINA), International Society of Indoor Air Quality and Climate (ISIAQ). Twenty-one associations affiliated to the EFA network took part in the project. Expert consultants examined the various aspects of health determinants related to indoor air quality in dwellings. Their findings are condensed in this volume. Their full-length reports can be accessed from the EFA website: www.efanet.org

The right to breathe healthy air in dwellings was recognised as a fundamental right by the World Health Organisation in 2000 consequent to scientific evidence of the health risks related to poor air quality. Unfortunately, this right and the adverse effects of indoor air pollution are largely ignored. The public and authorities need to be made aware that each day we are all exposed to potentially harmful substances in our homes. Although people with allergy, asthma or chronic obstructive pulmonary disease (COPD), children and the elderly are particularly susceptible to indoor air pollution and are aware of the hazards, everyone should be concerned about poor air in their homes.

The THADE expert consultants identified the main health determinants in dwellings: tobacco smoke, indoor-generated particulate matter, carbon monoxide, carbon dioxide, formaldehyde, dust mites, pet allergens, cockroaches, mould, pollen, nitrogen oxide, volatile organic compounds (VOCs), man-made mineral fibres, and radon. These determinants can affect the respiratory system in various ways; they can cause or exacerbate chronic bronchitis, asthma, and acute respiratory diseases. They can also cause a decline in respiratory functions and sensitisation to common aeroallergens. Some pollutants, like radon, environmental tobacco smoke and VOCs pose a significant cancer risk.

Methods and actions to prevent, reduce or eliminate the adverse effects of poor air quality have been identified for each of the above determinants. The measures suggested will improve indoor air quality, and alleviate the symptoms of allergy, asthma

and COPD, but they will not necessarily prevent these conditions. The measures proposed in this report will enhance the quality of life of everyone – the sick and the healthy alike.

Guidelines, actions and programmes related to indoor air quality in dwellings are already in place in many European countries. However, these actions are usually targeted to a specific topic or issue rather than aiming for an overall European and/or a national strategy.

It is clear that the reduction of indoor pollution requires the intervention of all parties involved: institutions, scientific societies, professional organisations, patients' organisations and the public. The actions proposed to control the indicated health determinants must be co-ordinated at various levels: international level (WHO), European Union level, national level, professional society level, and patient organisation level.

The actions identified have been classified into the following main categories:

- Improve ventilation.
- Improve cleaning methods and housing hygiene.
- Avoid wall-to-wall carpeting.
- Moisture control to prevent microbial growth.
- Control the sources of pollution, e.g. tobacco smoke and emissions from building and consumer products.

The measures recommended to implement these actions are:

- Avoidance of smoking indoors.
- Labelling systems to control emissions from building and consumer products.
- Better building codes and guidelines for ventilation and moisture control.
- Education and information campaigns.

Most of these measures are independent of cultural and climate differences. The exceptions are measures related to moisture control and ventilation, and even in these cases, European guidelines should be developed.

More research is needed about the effects and costs of prevention and remedial measures related to indoor air quality. Technical information about the building stock should be taken into consideration when developing guidelines for remedial action. This information should include data on heating and ventilation systems, cooking appliances, ventilation rates and moisture conditions. In addition, we need to know more about the prevalence of health determinants and the number of people sensitive to each specific determinant.

Although there is a large body of scientific information on healthy buildings, very little has been translated into practice. Unless policies are developed and put to work nationally and internationally, advances made in the indoor air sciences will not be exploited in real life and will have a limited impact on the community.

There is clearly an urgent need for a strategy to improve the quality of air in dwellings in Europe, and this can be developed on the data now available.

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