Children's Respiratory Health Surveys in Hungary

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Regional Commitment
European Environment and Health Process

Budapest, 2004

Parma, 2010

Ostrava, 2017

- Children's Environmental Health Action Plan for Europe
- RPG3: „We aim to prevent and reduce respiratory disease due to outdoor and indoor air pollution, thereby contributing to a reduction in the frequency of asthmatic attacks, in order to ensure that children can live in an environment with clean air."
- The PARMA Declaration confirmed this commitment and widened it (among others, to child-care settings)
- The Ostrava Conference declared air quality the major health risk in the region and calls to

"Improve indoor and outdoor quality for all"

World Health Organization Europe
UNECE UN environment
EUROPEAN ENVIRONMENT AND HEALTH PROCESS
Better health. Better Environment. Sustainable Choices.

Respiratory Health Surveys in Hungary

- Assessment of the prevalence of chronic respiratory symptoms
- First survey series between 1996-2003
- Carried out by the National Institute of Environmental Health
- ≈ 20,000 school children (ages 7-11)
- 29 towns and 80 villages all over the country
- Environmental risk factors
  - outdoor and indoor air pollution
  - home environment
  - life-style
  - socio-economic status etc.

National Children's Respiratory Surveys

- Repeated surveys in 2005, 2010, 2017
- Objectives:
  - To assess the prevalence of chronic respiratory symptoms among school-children as
    - an environmental health indicator
    - a basis of policies and programmes for decreasing respiratory diseases in childhood
  - To identify schools with extreme high or low prevalence of respiratory symptoms and to initiate targeted studies of the school environment
  - To evaluate the health status of the children in relation to their housing environment

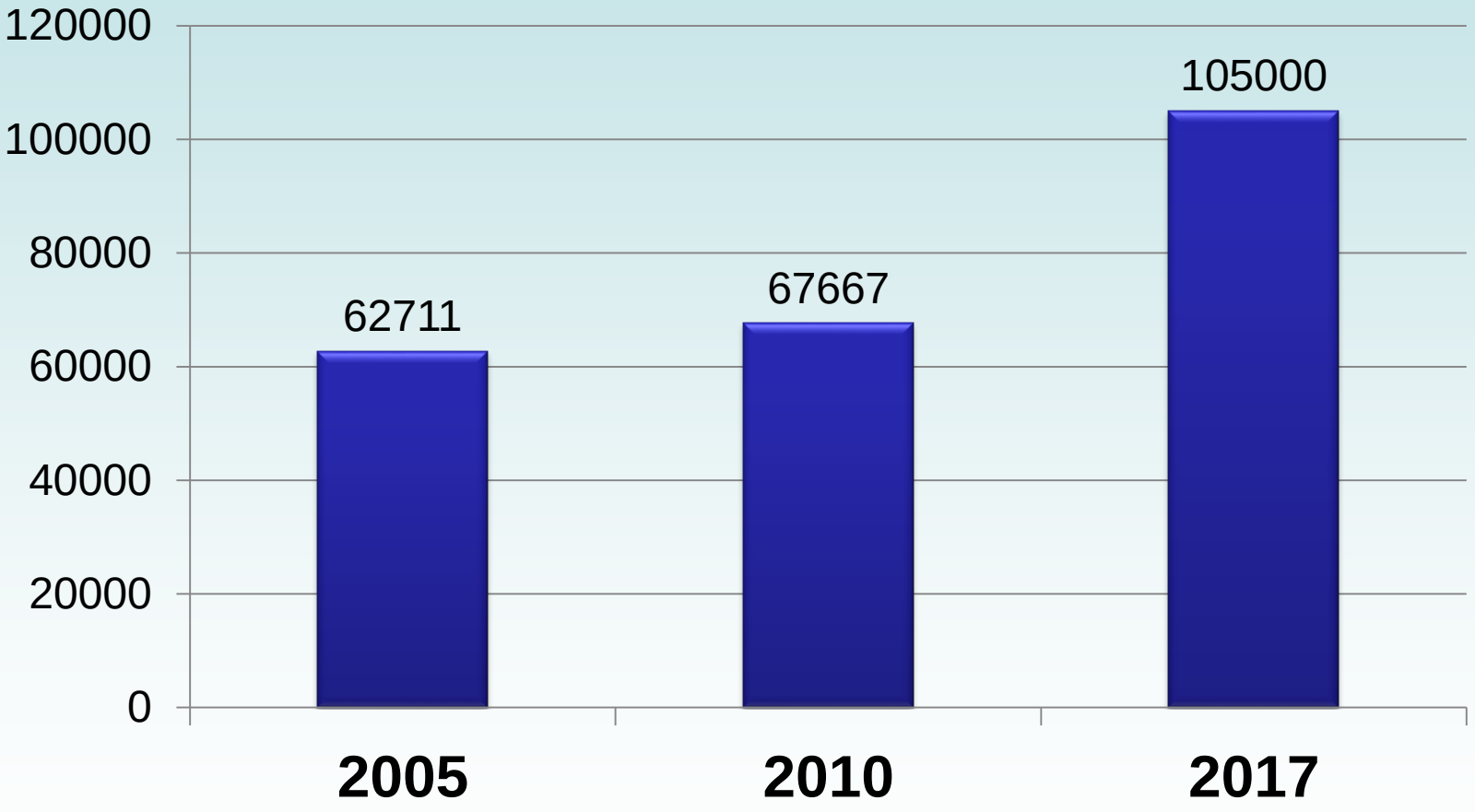
Methodology

- Study design: cross sectional
- Study population: all children in 3rd grade classes in every elementary school
  - 2005: 10+ children/class
  - 2010, 2017: every child
- Study area: Hungary (country-wide)
- Questionnaire assessment of exposure and health status through the parents
  - the children's present and past health status
  - perinatal conditions
  - the parents' respiratory health
  - smoking habits in the family
  - the home environment
  - socio-economic status of the family

Data management

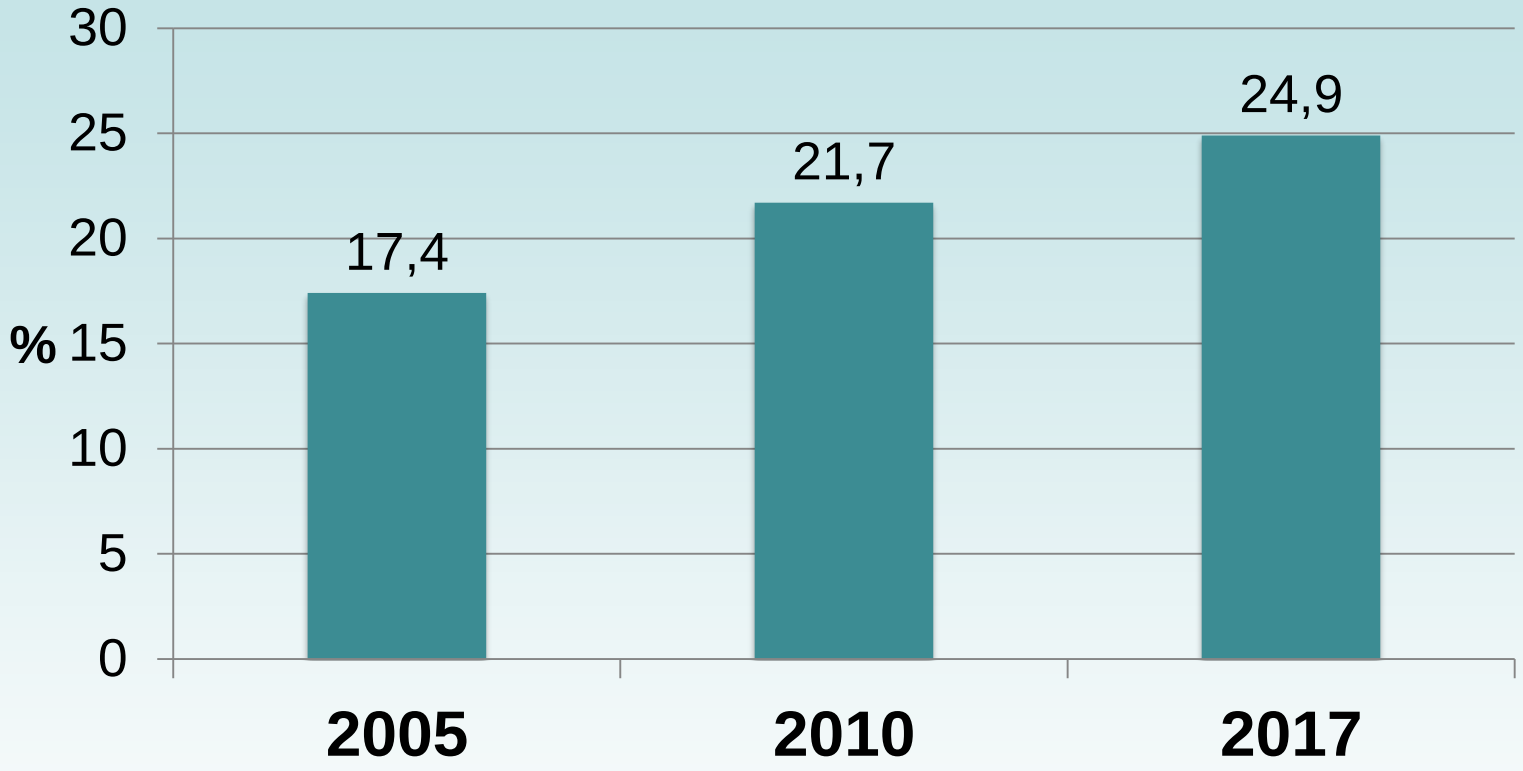
- Statistics: Multiple logistic regression (STATA 10.0)
- Adjustment for confounders
  - age, gender
  - mother's smoking during pregnancy
  - environmental tobacco smoke exposure
  - living density in the home
  - serious lower respiratory tract disease in the first 2 years of life
  - mother's education

Participation



	2005	2010	2017
Coverage:	76.4 %	71.8 %	?? (ongoing)

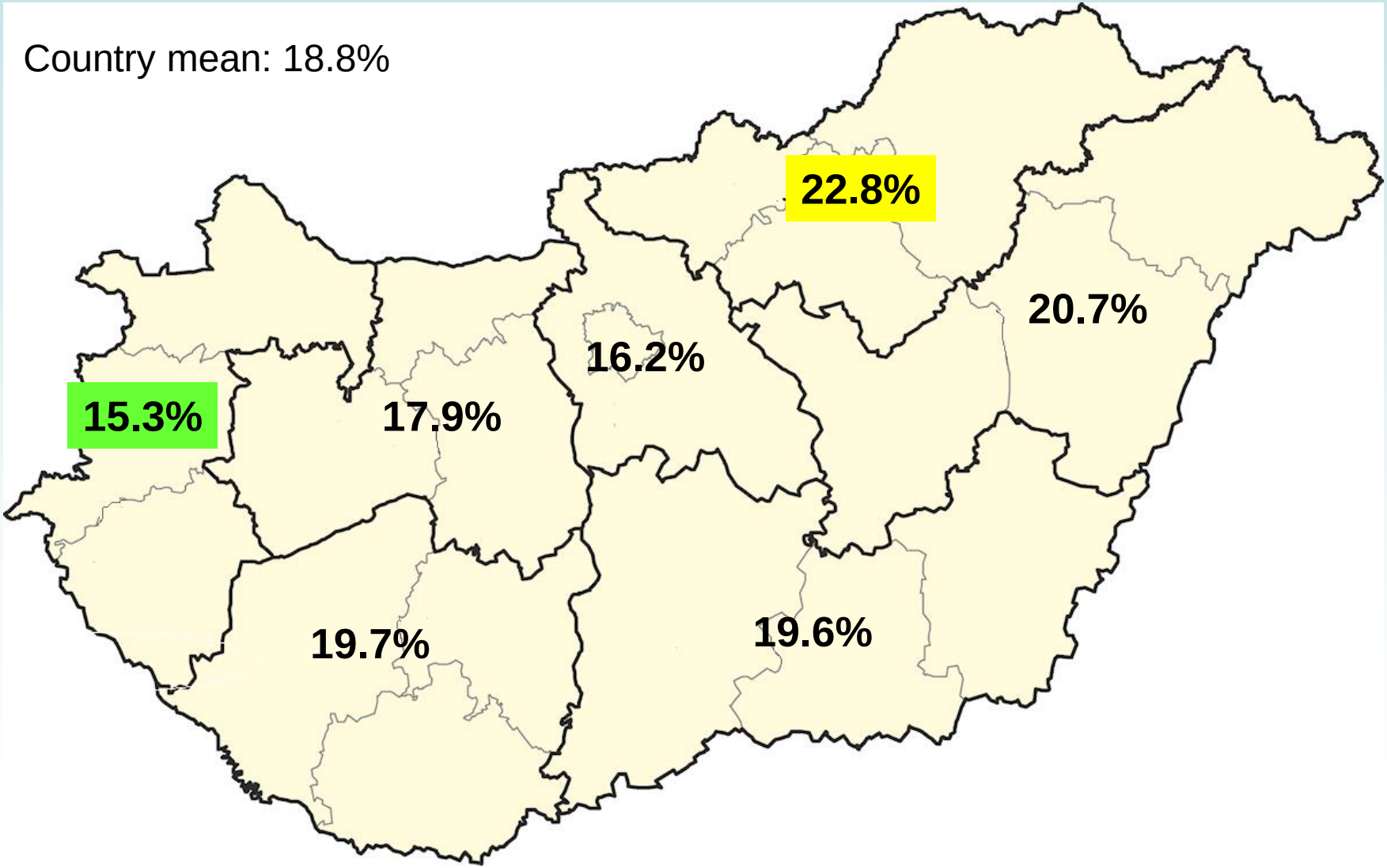
Children with chronic bronchitis symptoms



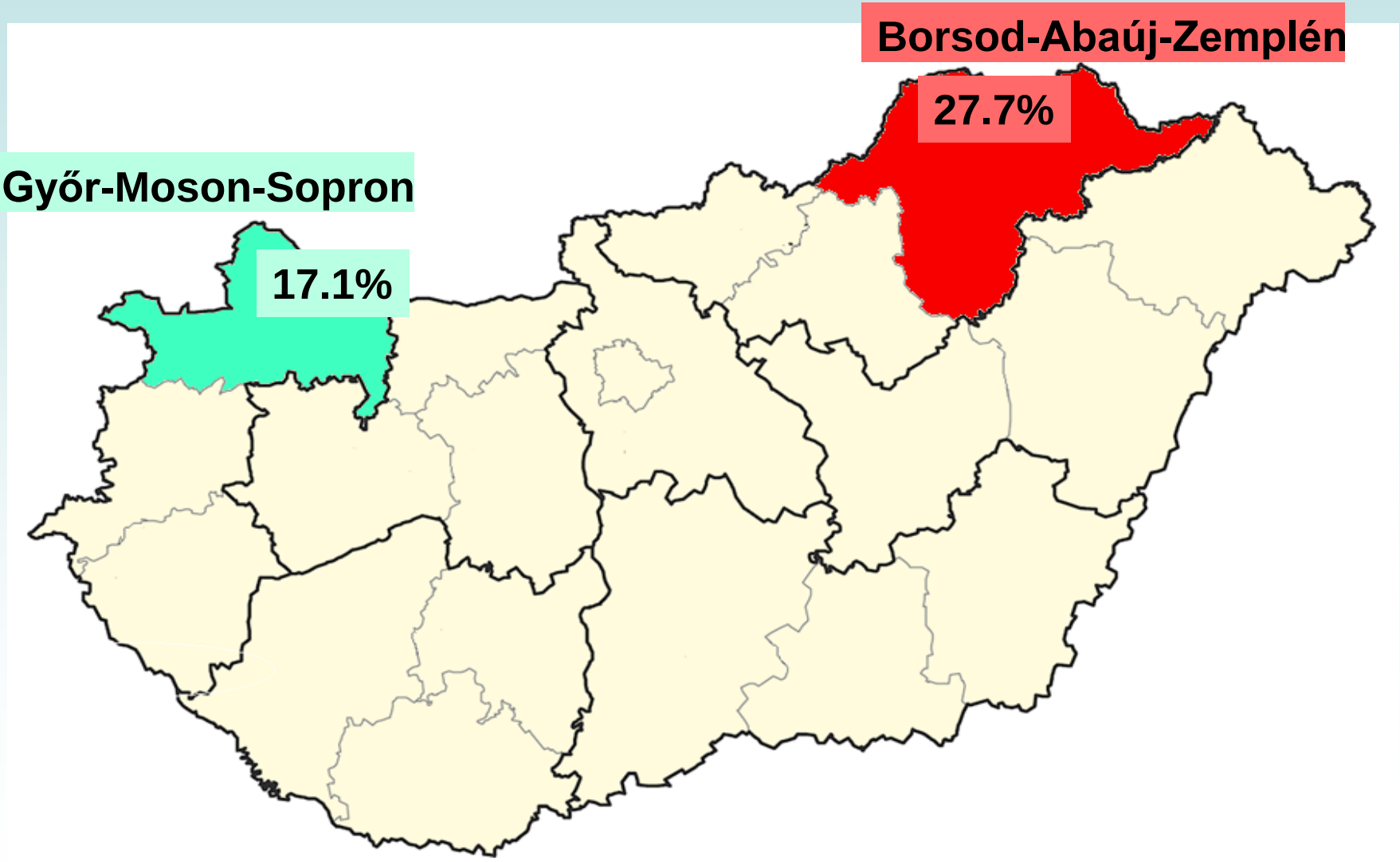
Questions on bronchitis (cough)

- Does your child *usually* **cough in the morning** in autumn-winter season?
- Does your child *usually* **cough** during the **day or at night** in autumn-winter season?
- Did your child **cough** on *most days* **for at least 3 months** consecutively in the last autumn-winter season?
- Does your child *usually* **cough up phlegm** when he/she does not have a cold?

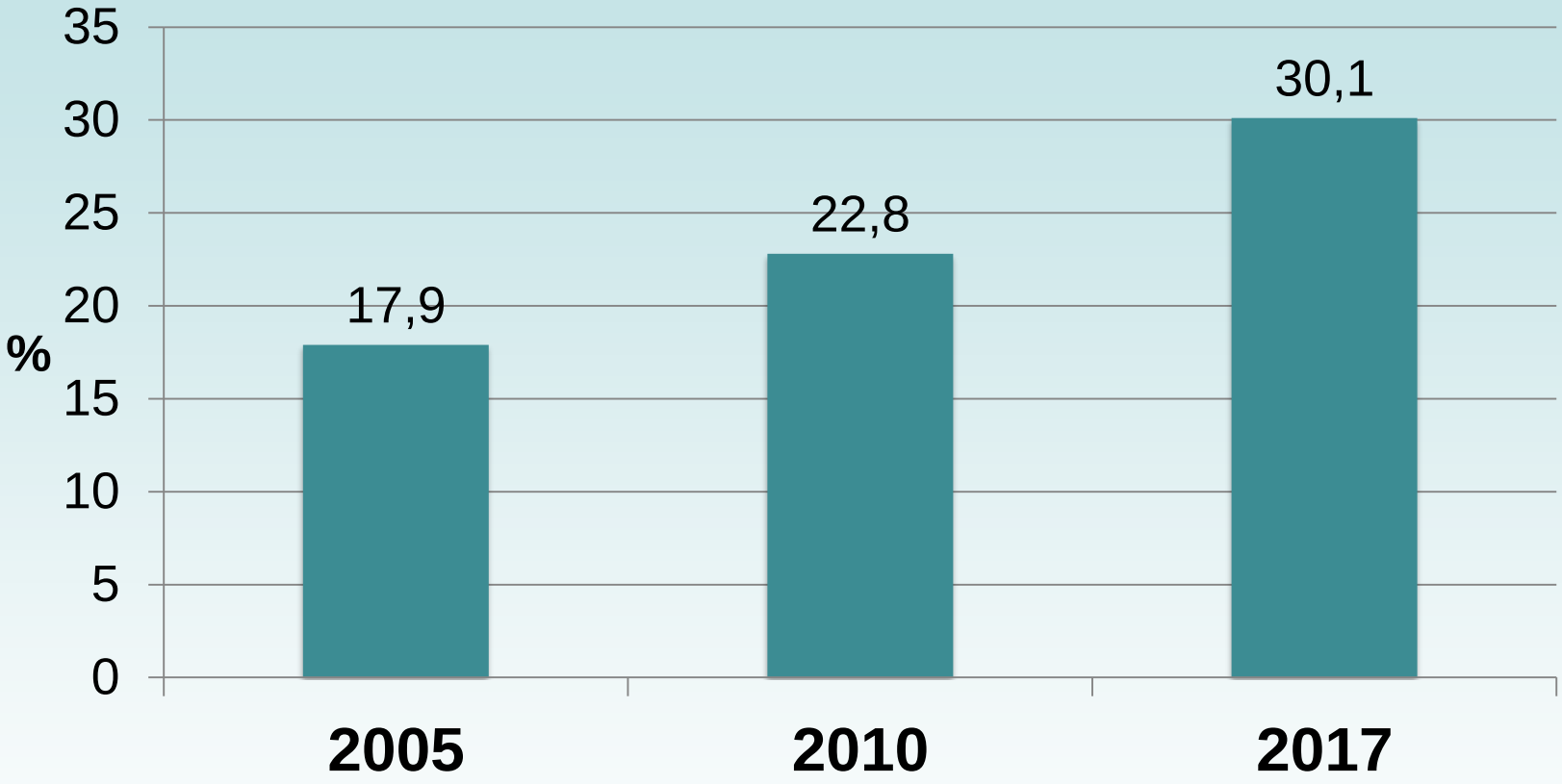
Geographic disparities in the prevalence of chronic bronchitis symptoms in 8-10 year old children (2010)



Geographic disparities in the prevalence of chronic bronchitis symptoms in 8-10 year old children (2017)



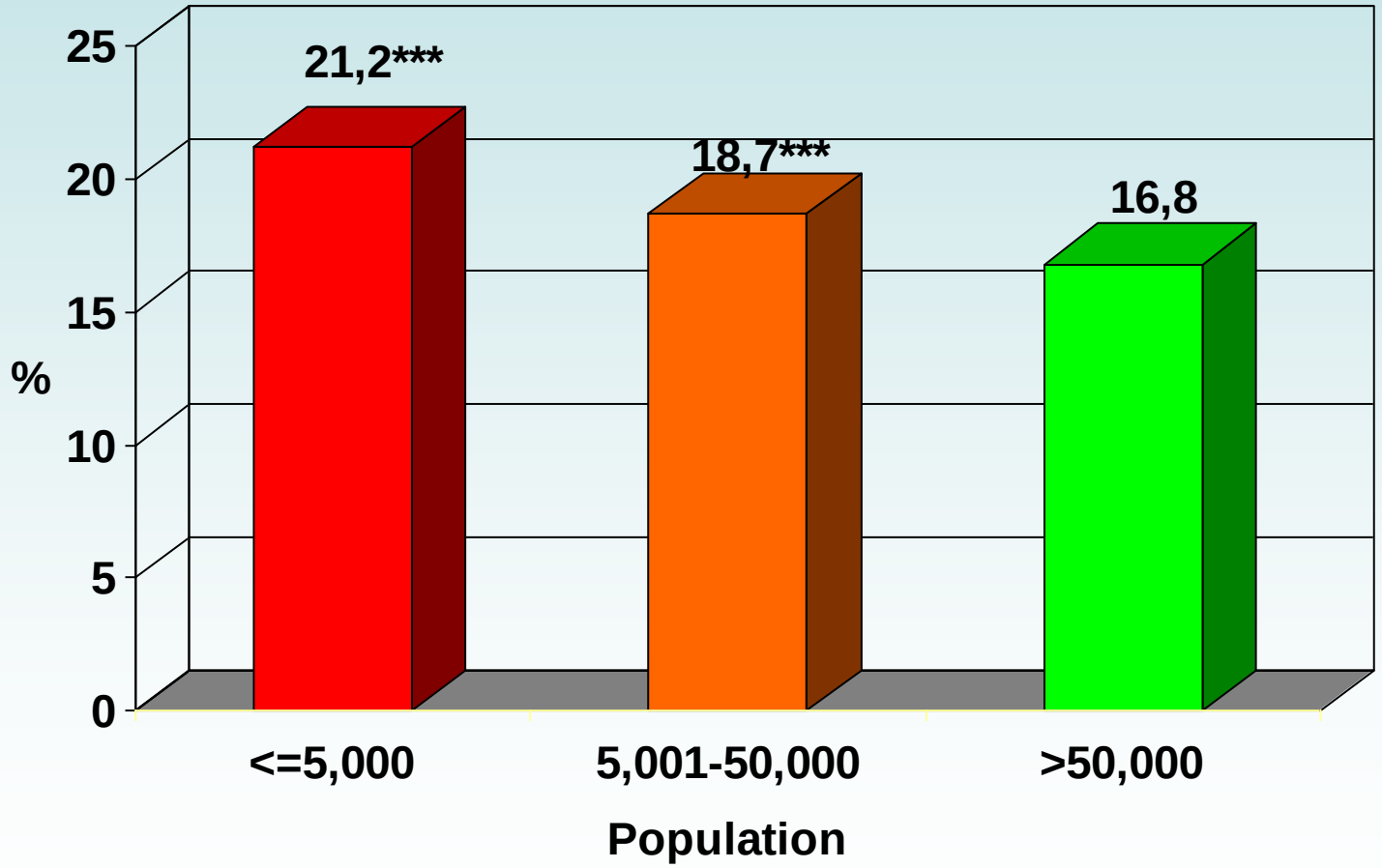
Children with asthmatic symptoms



Questions on ASTHMATIC symptoms

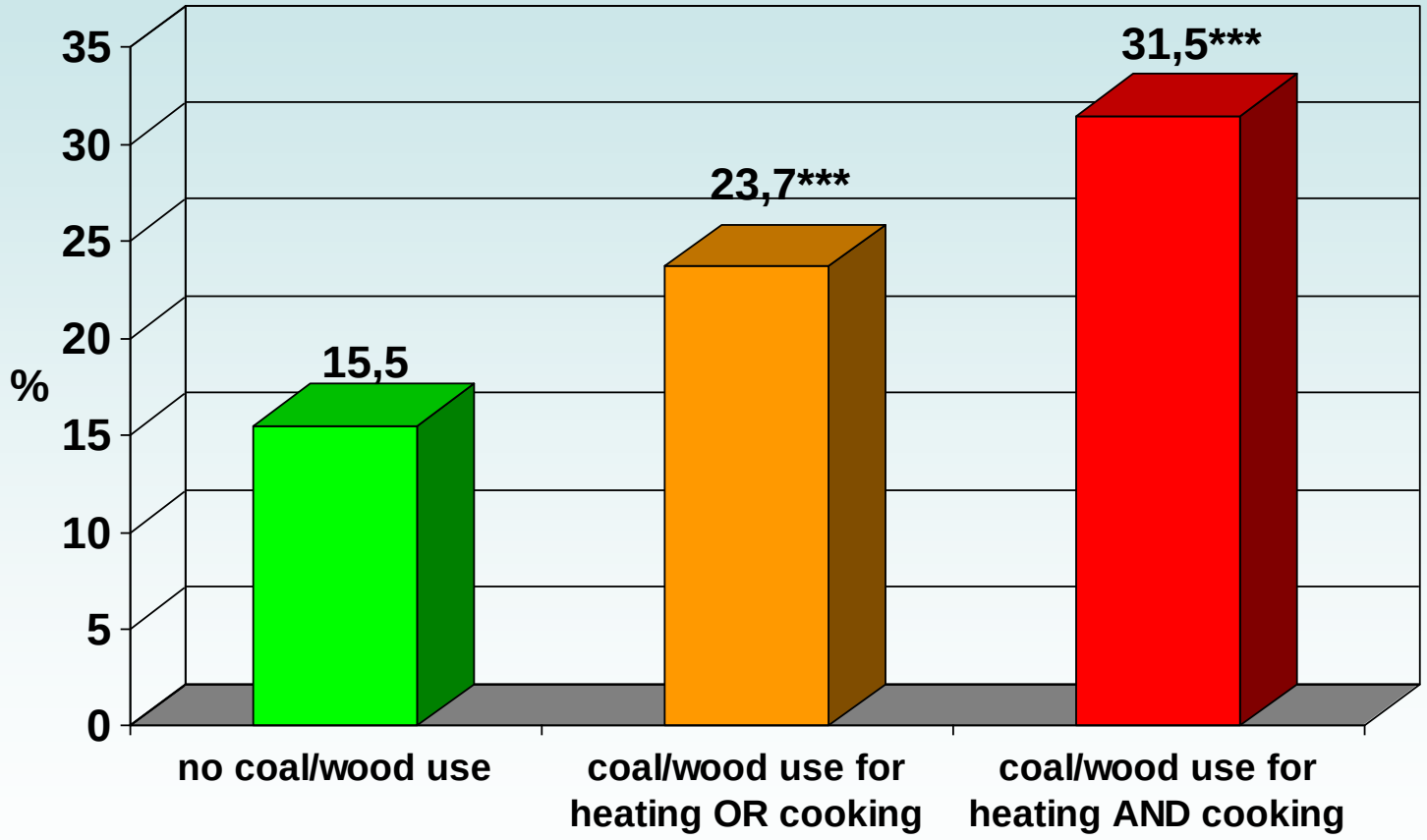
- Has your child been **woken up at night by wheezing** in the last twelve months?
- Has this child had a **dry cough at night** in the last twelve months, apart from a cold or a chest infection?
- Has this child's chest sounded **wheezing or whistling** in the last twelve months?

Impact of settlement size on the prevalence of chronic bronchitis symptoms in 8-10 year old children (2010)



***p<0.001

Impact of heating/cooking means on chronic bronchitis symptoms



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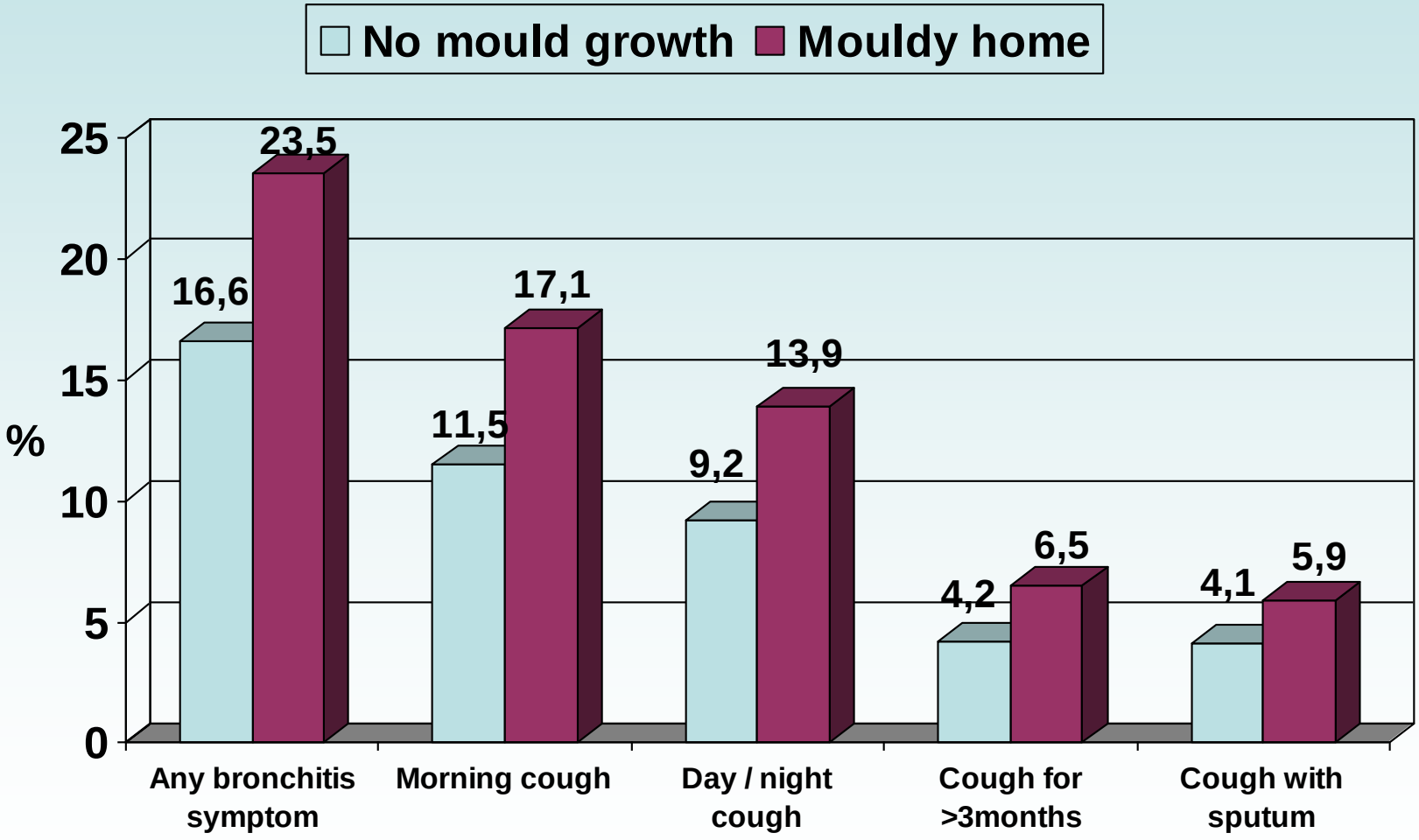
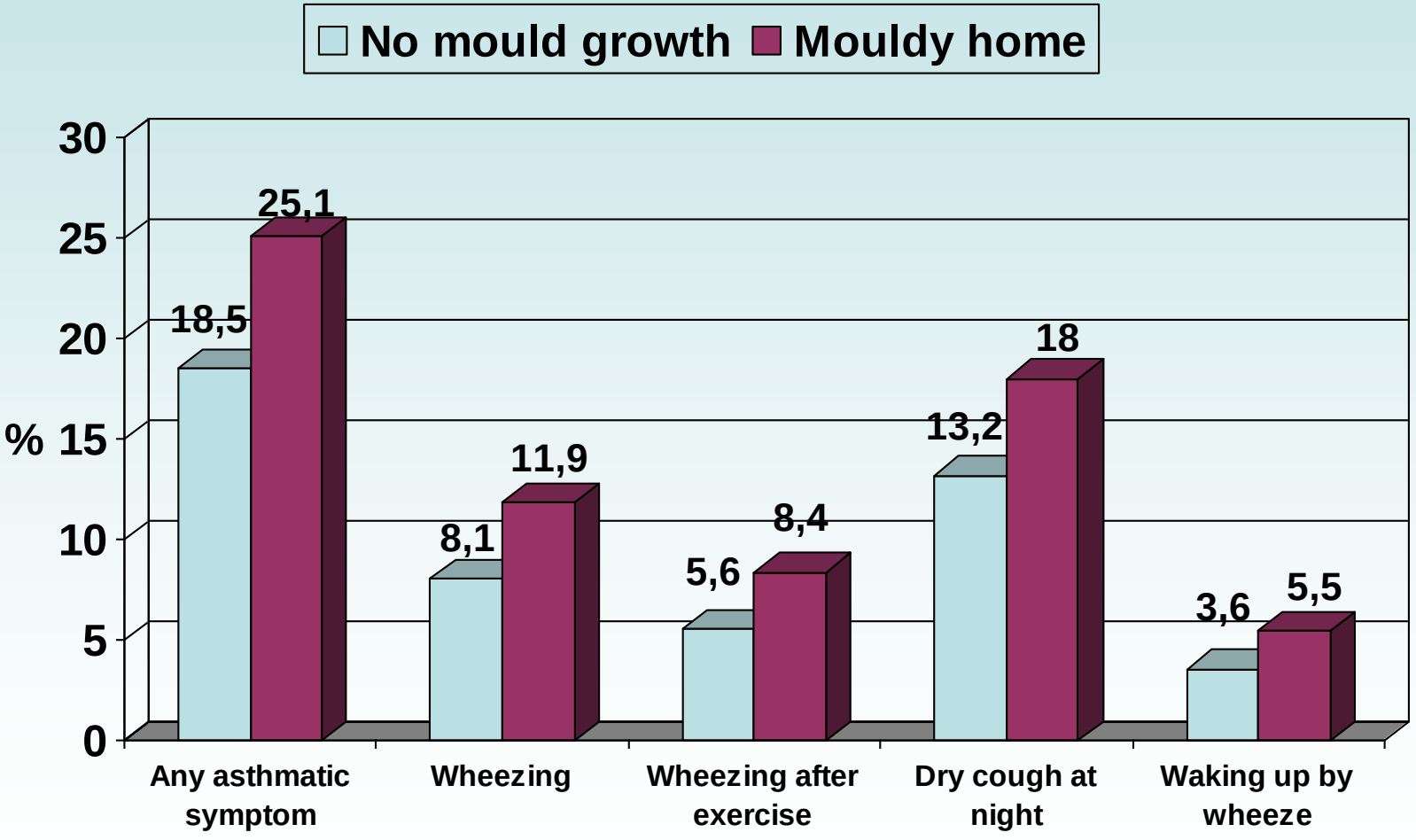
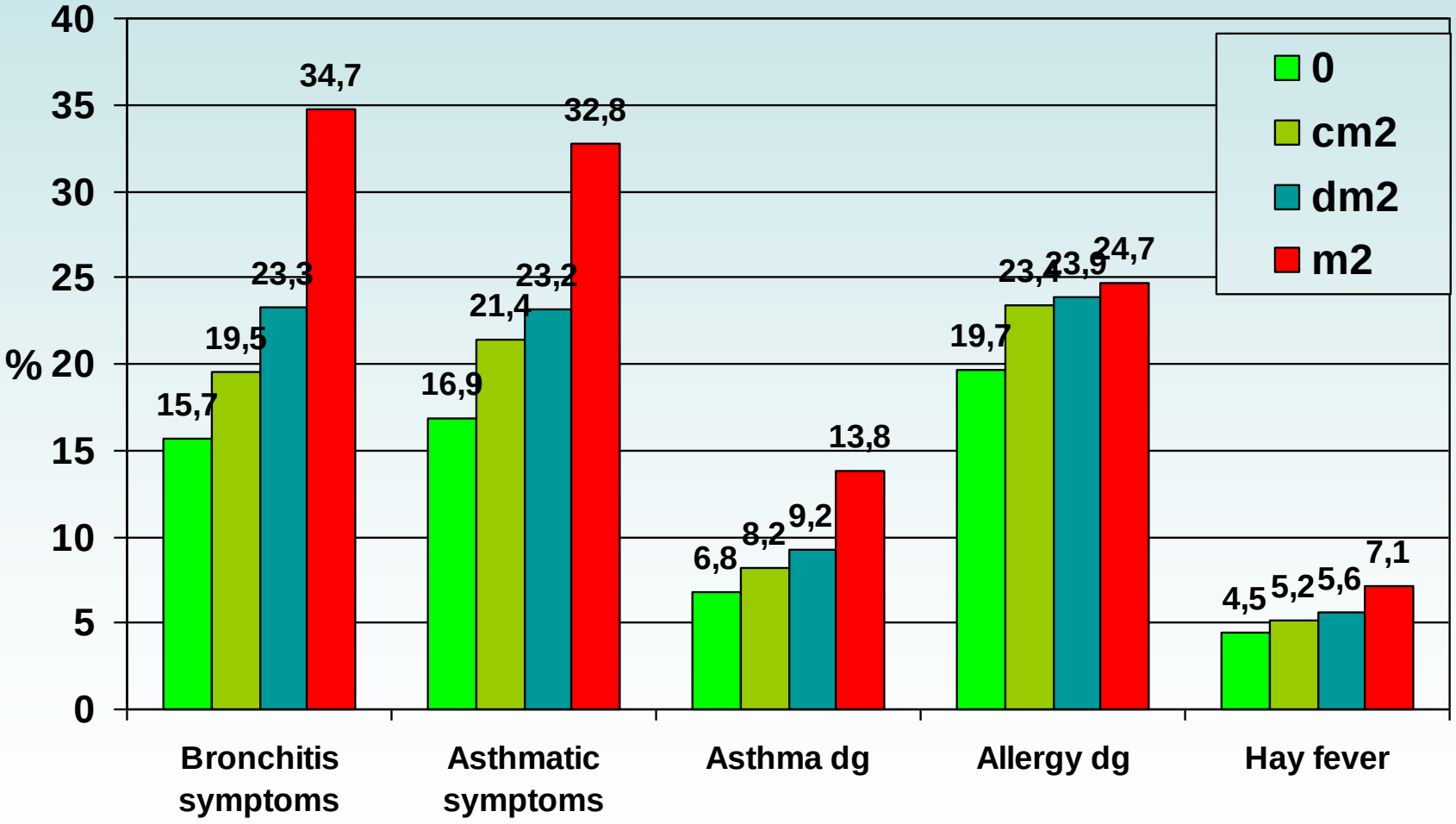
Correlation of mould in homes and chronic bronchitis symptoms in 8-10 year old children (2010)



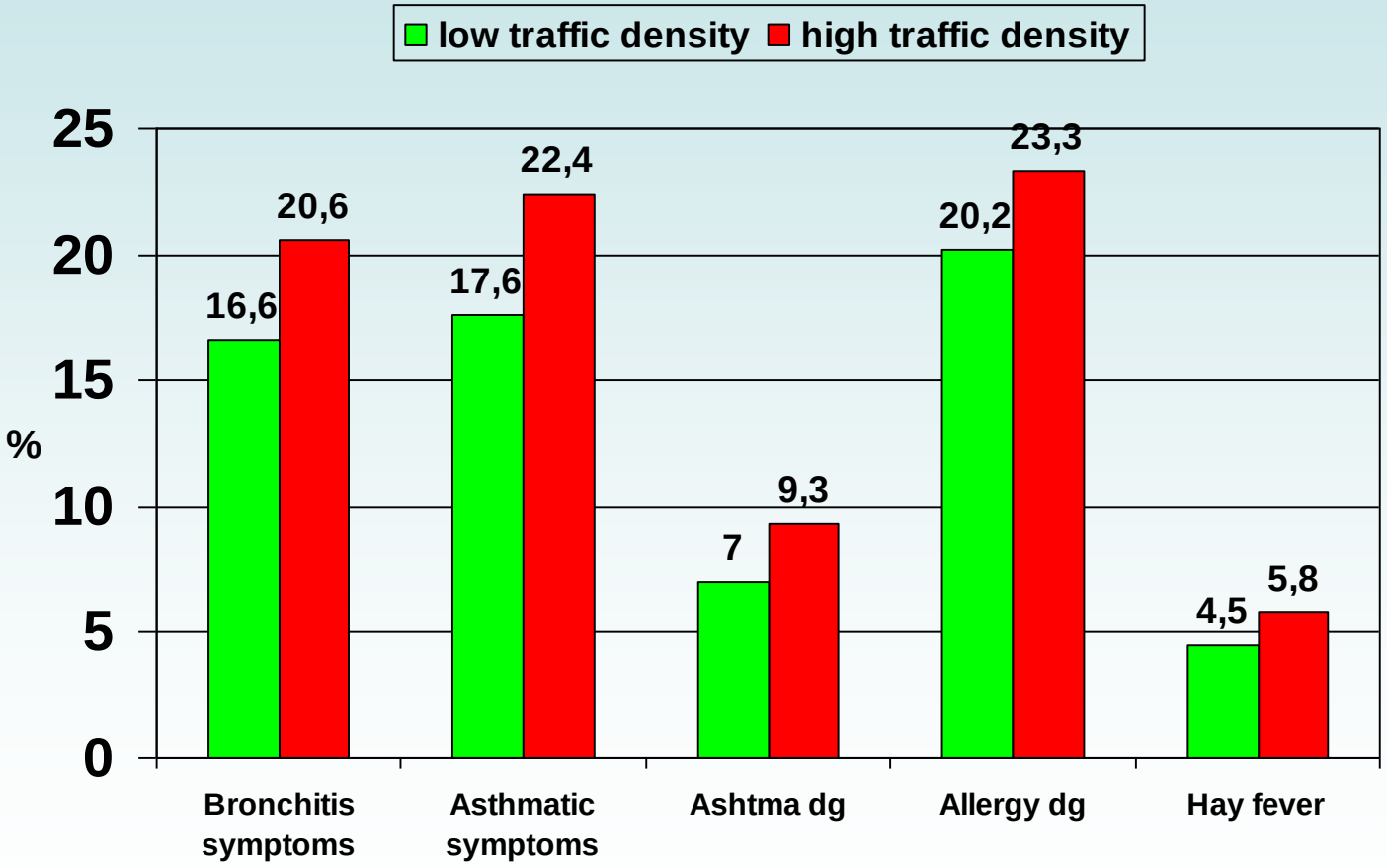
Correlation of mould in homes and asthmatic symptoms in the past 12 months in 8-10 year old children (2010)



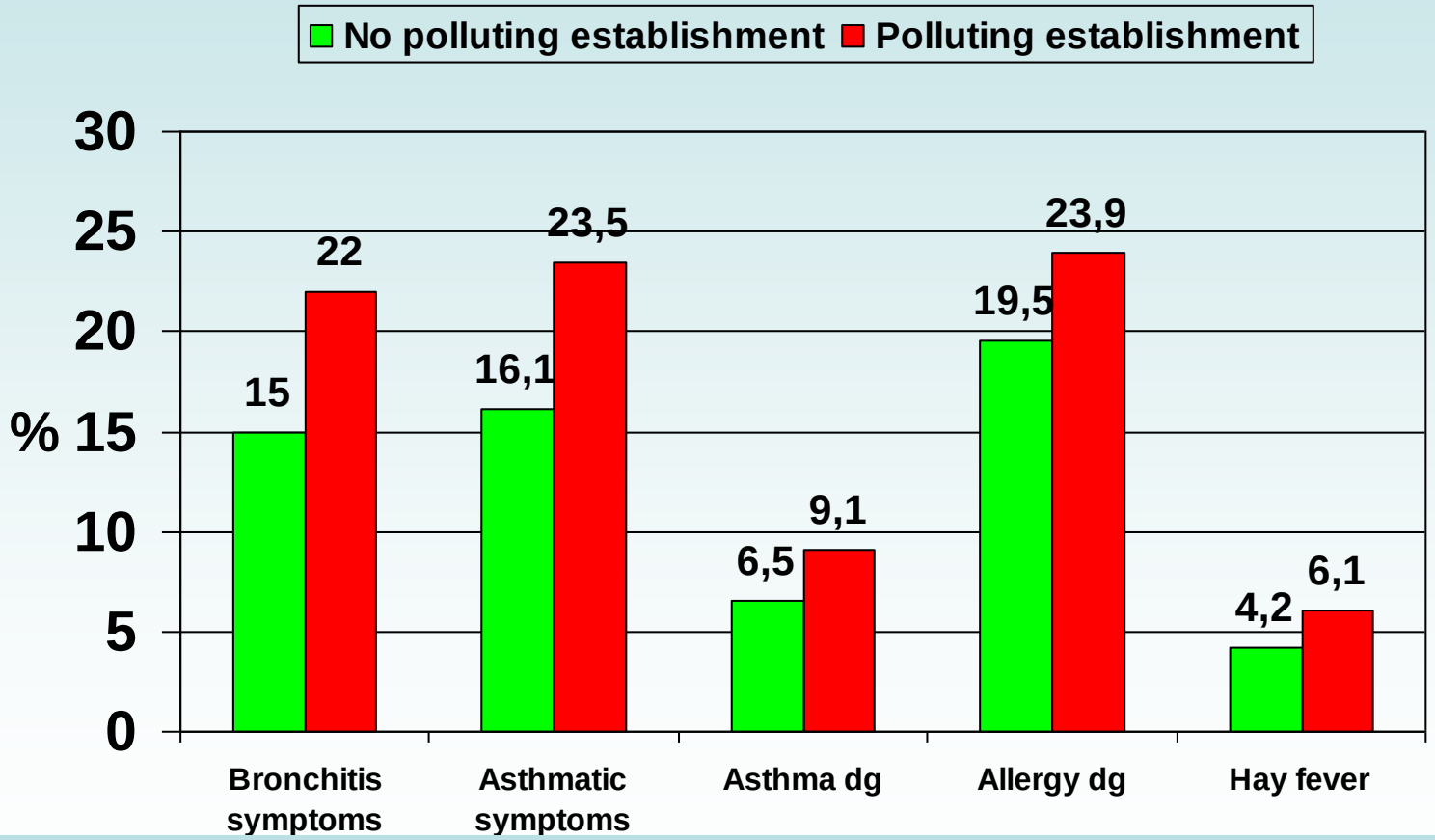
Associations between the size of mouldy areas and the prevalence of children with various respiratory and allergic symptoms



Impact of high traffic in the home area on respiratory and allergic symptoms in 8-10 year old children

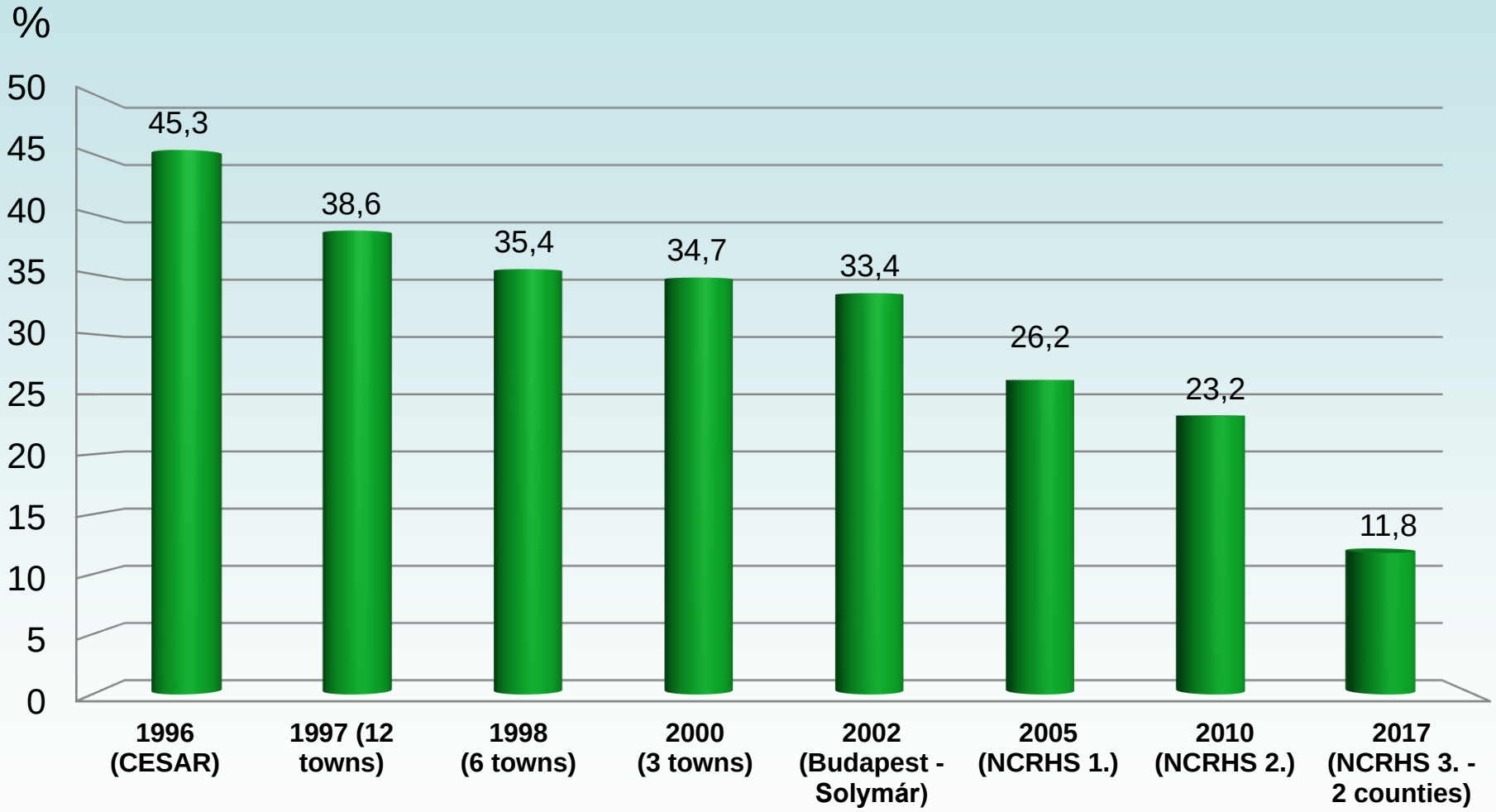


Prevalence of 8-10 year old children with various respiratory and allergic symptoms living in homes with polluting establishment in the neighbourhood

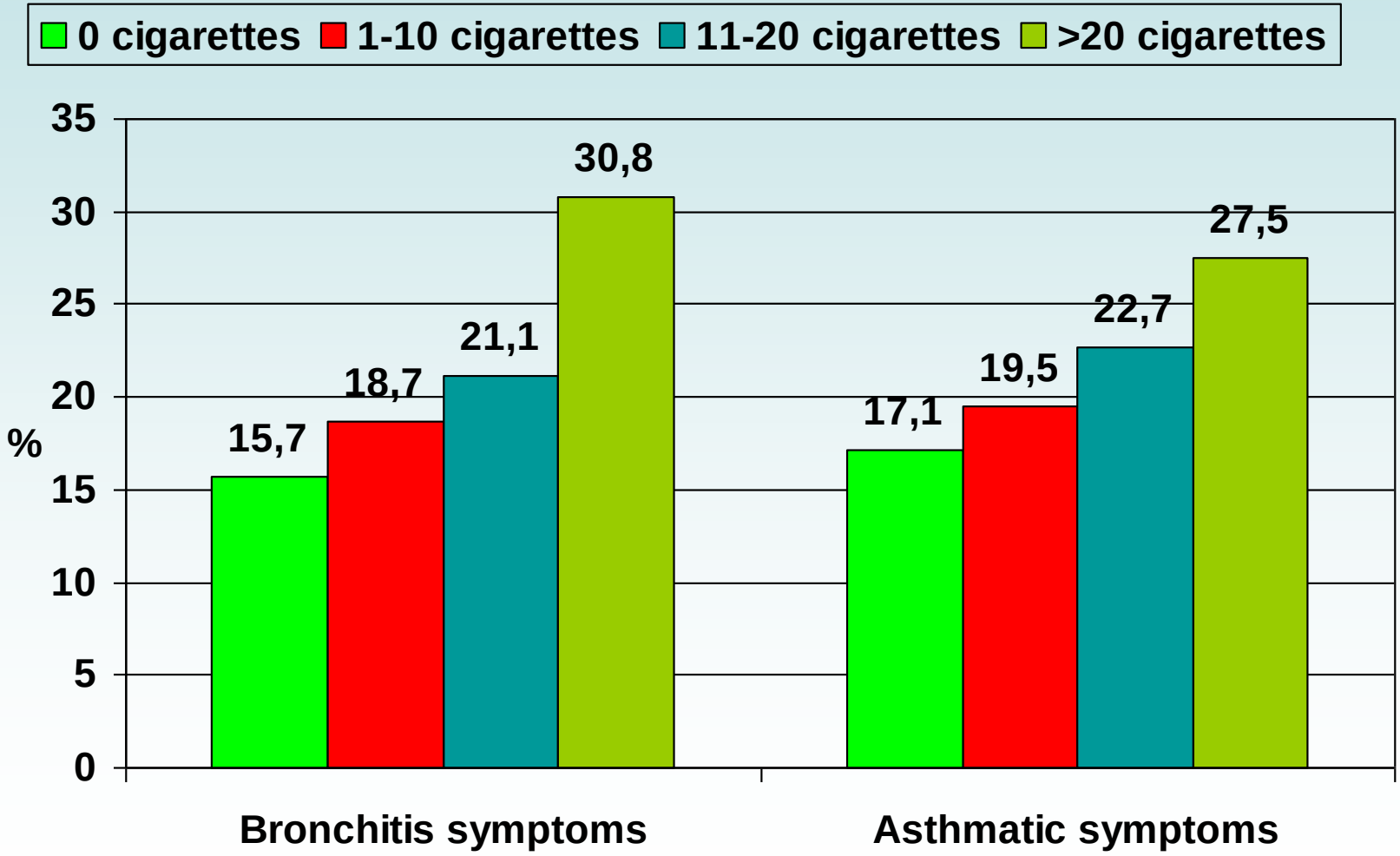


Adjusted OR=	1.53	1.56	1.43	1.31	1.46

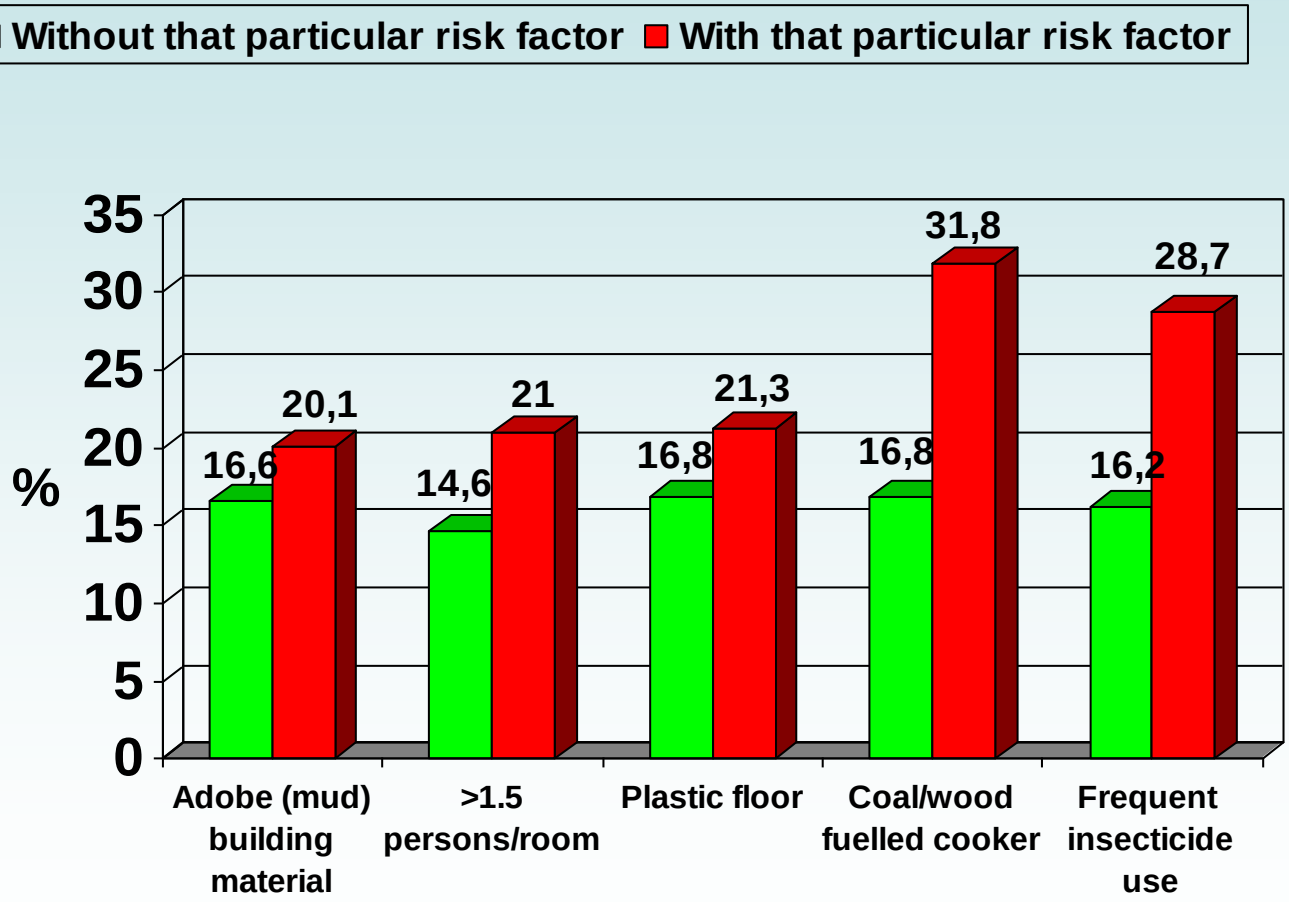
Smoking in the home of the participating children



Impact of indoor smoking on the prevalence of chronic respiratory symptoms in 8-10 year old children



Impact of other risk factors on chronic bronchitis syndromes



Adjusted OR=	1.18	1.31	1.21	1.71	1.76

Utilization of the results

- As an environmental health **indicator** (**WHO and EHIAs**) to detect spatial differences and temporal changes
- Foundation **of targetted** environmental health **studies**
- Evaluation of the roles of various **environmental risk factors** in the occurrence of chronic respiratory symptoms of children
- **Regular monitoring** of the prevalence of children's chronic respiratory symptoms in order to observe trends and to establish basis for elaborating appropriate environmental health programmes and evaluating their effectiveness

Thank you for your attention

THE QUESTIONNAIRE / 1

Questions on COUGH (Bronchitis)

- Does your child usually cough in the morning in autumn-winter season?
- Does your child usually cough during the day or at night in autumn-winter season?
- Did your child cough on most days for at least 3 months consecutively in the last autumn-winter season?
- Does your child usually cough up phlegm when he/she does not have a cold?

THE QUESTIONNAIRE / 2

Questions on ASTHMATIC symptoms

- Has your child been **woken up at night by wheezing in** the last twelve months?
- Has this child had a **dry cough at night** in the last twelve months, apart from a cold or a chest infection?
- Has this child **ever had asthma**, diagnosed by a doctor?
- Did this child use **medication** (inhalers or tablets or liquid medicines) in the last twelve months?
- Has this child's chest sounded **wheezing or whistling** in the last twelve months?

THE QUESTIONNAIRE / 3

Questions on ALLERGY

- Is this child allergic to house dust?

  pets?

  pollen?

  food?

  medicine?

  anything else?

- Has a doctor diagnosed this allergy?

THE QUESTIONNAIRE / 4

Other groups of questions

- Name and postcode of the settlement and the school
- The child's age, gender, perinatal conditions
- The parents' respiratory and allergic diseases, smoking
- Characteristics of the home environment (building material, floor and wall coverings, living density, means of heating and cooking, mould growth, pets, nearby traffic and industry, etc.)
- The parents' education and socio-economic status of the family