Evaluation of the Hungarian situation of indoor and outdoor air pollution and the respiratory diseases of children by the tools of the European Environment and Health Information System (ENHIS)

Tibor Málnási, Anna Páldy
National Institute of Environmental Health, Budapest
malnasi.tibor@oki.antsz.hu

Regional Priority Goal III. 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.

Children's Environment and Health Action Plan for Europe, 2004

The Children's Environment and Health Action Plan for Europe (CEHAPE) adopted by the Fourth Ministerial Conference on Environment and Health (Budapest, 2004) formulated four regional priority goals to support policies for the prevention of children's health, to reduce the burden of disease of children and to reduce hazardous environmental exposures. The European Environment and Health Information System (ENHIS) coordinated by the WHO European Centre for Environment and Health and supported by the DG SANCO developed indicators to monitor the implementation of these targets. Selected indicators of the third goal are the following:

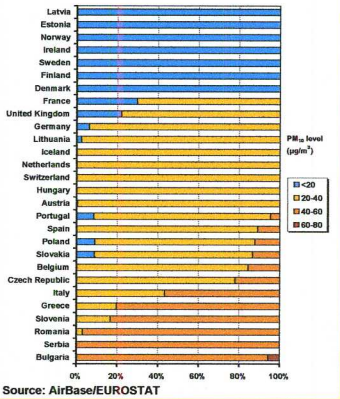
EXPOSURE

One indicator of the **exposure to outdoor air pollution** is the population-weighted annual mean particulate matter (PM_{10}) concentration. The database contains data on those cities only, where PM_{10} is regularly monitored (urban background monitoring stations). The exposure in the Hungarian cities is less than the limit value of the EU (40 µg/m^3), but it is above the WHO air quality guideline level (20 µg/m^3).

The **indoor exposure** is represented by the indicator 'Exposure of children to environmental tobacco smoke'. The data of the international survey is significantly different from the result of national surveys[1]. Information and motivating activities are needed to reduce the ETS exposure of children in the home.

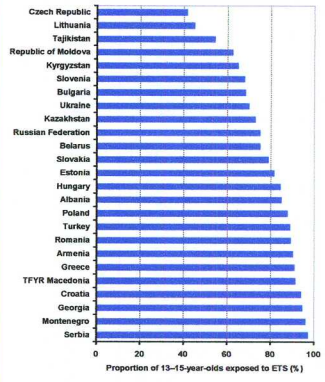
(1) According to the results of Hungarian surveys (1997 – 2000) on children aged 7-11 years, at least one member of the family smokes in 38.7 – 56.1% of the surveyed families (Z. Virágh, 2005).

Percentage of children living in cities with various PM_{10} levels, 2004 (or last available year)



Source: AirBase/EUROSTAT

Proportion of 13–15-year-olds exposed to ETS in their homes, 2002–2005



Source: Global Youth Tobacco Survey

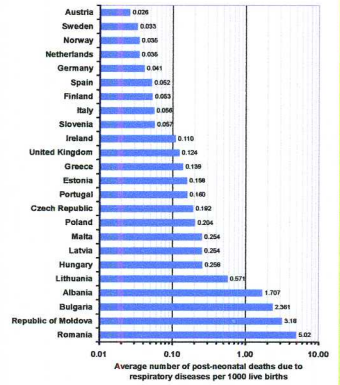
EFFECT

Infant mortality due to respiratory diseases differs widely across the European countries. In addition to the environmental factors (air pollution), numerous other factors (infectious diseases, lifestyle, social factors etc.) play a role in determining this mortality. Therefore the environment and health context has to be evaluated carefully.

Asthma and allergic symptoms cause a significant burden of disease in European children (according to the ISAAC study) as well as in Hungary based on the result of Hungarian surveys[2]. Recent evidence supports a causal relationship between exposure to air pollution and exacerbation of asthma, mainly due to exposure to particulate matter (PM) and ozone.

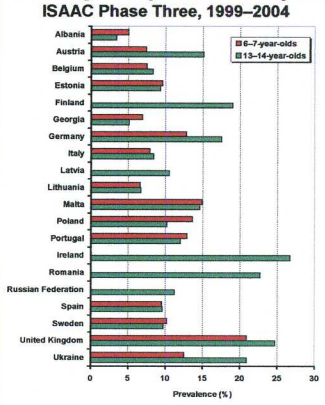
(2) According to the results of Hungarian surveys on children aged 7-11 years between 1997 and 2000, the prevalence of asthmatic symptoms was 15.7%, while it was 17.1% among children aged 8-9 years in a 2005 survey (P. Rudnai).

Post-neonatal mortality rate due to respiratory diseases, 2001



Source: WHO Mortality Database

Prevalence of asthma symptoms in children aged 6–7 years and 13–14 years, ISAAC Phase Three, 1999–2004



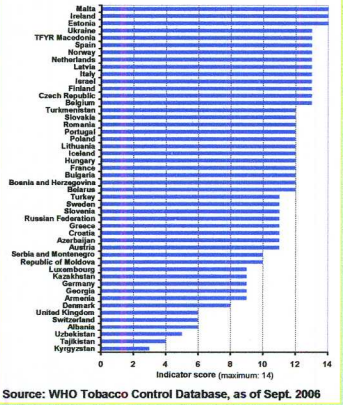
Source: ISAAC

ACTIONS

Policies to reduce the exposure of children to environmental tobacco smoke are implemented and enforced in most of the European countries. Smoking in public places and in public transport vehicles is prohibited or limited and the advertisement of tobacco products and sell of tobacco products to minors is restricted in the majority of the countries. However there are countries where smoking is not restricted even in educational and health care facilities. Several member states of the EU implemented a complete smoking ban in public places, in restaurants, pubs and bars. The European Commission welcomes these examples (e.g. Ireland, Italy, Malta, Sweden, UK) and launched an open public debate in 2007 on the best way forward to tackle passive smoking in the EU by the Green Paper 'Towards a Europe free from tobacco smoke'.

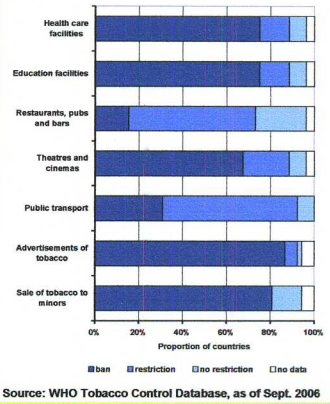
In 2007, the Hungarian government initiated a national policy to ban smoking in all public places from 2009 on.

Degree of implementation of policies to reduce exposure of children to ETS in the WHO European Region



Source: WHO Tobacco Control Database, as of Sept. 2006

Proportion of countries in the WHO European Region implementing policies to reduce exposure of children to ETS



Source: WHO Tobacco Control Database, as of Sept. 2006