

A dialogue on chemicals and children

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Chemicals are part of life in the 21st century and are found in nearly everything we use. Some 70 000 different chemicals are available on the market today and around 1500 new ones are introduced every year. Estimates indicate that at least 30 000 chemicals on the market have never been subject to comprehensive testing on any risks to humans, and that appropriate testing of risks during their developmental stages was not included in standard testing (1). Furthermore, there is little information on which population groups are being exposed to which chemicals, at what doses, and what the exposure means to health.

It is clear that children may be particularly at risk. Developing organisms, especially during embryonic and fetal periods, early years of life and puberty, go through "windows of susceptibility" during which they are particularly vulnerable to specific environmental stressors. Many of the chemicals known to cause adverse effects easily cross the placenta and can interfere with the growth and development of the fetus. Studies have documented that some solvents and pesticides can cause cancer and that lead, methyl mercury, polychlorinated biphenyls and some pesticides cause neurodevelopmental disorders. We may be conducting a large-scale experiment with children's health.

In the recent WHO Children's Environmental Burden of Disease Study (2), it was estimated that about one third of the total burden of disease in children caused by environmental exposure is attributable to air pollution, water and sanitation, lead and injuries. Lead is one of the few chemicals for which some exposure data are available and a dose-response function is known. The study found that 2–4.5% of the total burden of disease in children is caused by mild mental retardation as a result of exposure to lead. A study from the Center for Children's Health and the Environment on the contribution of toxic chemicals of human origin to

disease in children concluded that the environmentally attributable portion was 30% for asthma, 5% for cancer, and 10% for neurobehavioural disorders (3).

Risks related to chemicals are now receiving international attention. WHO Member States in the European Region, at the recent ministerial conference on environment and health held in Budapest (4), agreed that action should be taken without delay to reduce the possible effects of chemicals on human health. They expressed concern about the potential for long-term toxicity, including the carcinogenic, neurotoxic, immunotoxic, genotoxic, endocrine-disrupting and allergenic effects of many chemicals. Participants called upon industry to enhance the collection of relevant information for risk assessment of large-tonnage substances and to stop placing on the market products containing substances that have, or may have, adverse effects on children's health or the environment. They also undertook to achieve by 2020 the use and production of chemicals in ways that lead to the minimization of significant adverse effects on human health, highlighting particularly substances such as phthalates. The importance was reaffirmed of the precautionary principle as a risk management tool in policy-making.

The decisions taken at Budapest reflect a long-term vision for the protection of children's health. Implementation of the commitments made, however, will not be easy: data for risk assessments are often inadequate; feasible alternatives to certain substances are not available or are not sufficiently safe; and economic and social interests may hamper the implementation of effective public health policies. The European Union's REACH programme proposes a new regulatory framework for chemicals that will establish, among other things, a system that places responsibility on industry to provide the missing toxicity and exposure data and proof that its products are safe. This is an innovative principle which, if applied in a wider

context, may change dramatically the implementation of preventive public health policies.

At Budapest, Member States signed the Children's Environment and Health Action Plan for Europe and pledged to produce their own action plans by 2007. Fifteen major areas of possible action — including legislation, research, monitoring and public participation — will enable them to tackle effectively the four "regional priority goals" including the one concerning chemicals. This action plan is not legally binding, though the young people in the official country delegations and many other stakeholders called for it to be so. Nevertheless, governments carefully negotiated the action plan and signed up to it.

The implementation of this ambitious action plan will require dialogue and collaboration, particularly with the chemical industry. For the public health sector, the chemical industry is not another tobacco industry: many chemicals, such as pharmaceuticals, have helped to improve the quality of life and the quality of health. There is every reason to expect that the industry will welcome dialogue and scrutiny to ensure that chemicals work for health as well as for economic progress. ■

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