



Biomonitoring and Human Health



A photograph of a woman and a young child sitting on a light-colored floor. The woman is on the left, wearing a light-colored top, with her hand resting on the child's back. The child is on the right, wearing a light-colored top and shorts, looking towards the camera. The background is a plain, light-colored wall. The entire image has a warm, orange-toned overlay.

“Human biomonitoring is a powerful tool to assess human exposure to environmental stressors and potential health effects. Integration of biomonitoring data with environmental monitoring and health monitoring data and efficient communication strategies are essential to allow policy responses.”

Extract from the conclusions of the International Conference “European Environment & Health Action Plan 2004-2010 : Implementation”
December 2004
Egmond aan Zee, The Netherlands



An issue we are serious about

For some time now, the results of biomonitoring studies on the presence of man-made chemicals in human bodies have been regularly drawn to the attention of the general public by various stakeholders. The chemical industry is aware of this societal concern, and takes its responsibility to address it seriously.

An industry committed to public health & safety

Chemistry gives society more choices. Its products contribute to people living longer, healthier and safer lives. The chemical industry has a great interest in and commitment to developing products that are safe for humans and the environment. It therefore has many years' experience in the safe use of chemicals.

Chemicals are tested and regulated to protect the safety of their users. Risk assessments carried out under existing chemicals legislation and voluntary programmes of the industry are instrumental in determining potential exposure and safety limits. Furthermore, the chemical industry continues to support the political objectives of the new European chemicals policy, REACH, to provide a unified systematic approach to testing and classifying chemicals according to their respective risk profile.

Chemicals in the body

Living organisms are exposed to natural and man-made substances in their environments. Often absorbed through eating, breathing, drinking and direct contact, these substances are broken down and processed by physiological mechanisms. Therefore the presence of trace amounts of a chemical substance does not necessarily constitute a health risk and should not cause alarm.

What exactly is biomonitoring?

Fast advances in analytical chemistry are now allowing us to measure minute amounts of certain substances in human fluids or tissues, which can give us a better understanding of human exposure to a wide range of substances.

The chemical industry has long used such analytical techniques, commonly referred to as biological monitoring or biomonitoring, in occupational health to provide information on the exposure level of its workers. A familiar example of measurement of trace compounds is the routine testing of sportspeople's blood or urine.

Biomonitoring can help improve public health decisions when it is part of an integrated strategy. Such a strategy should take account of relevant health and toxicological data to assess the potential health risk of exposure. Biomonitoring provides only a snapshot of substances present in the body at a single point in time. It does not provide information about the source or history of exposure, nor its relevance from a health standpoint.

Increasing and sharing our understanding

Many years of research have already been devoted to interpreting biological responses to chemicals. As part of our industry's longstanding Responsible Care® initiative, Cefic is committed to helping answer the questions that arise and advancing the science needed to interpret biomonitoring data in the context of safety. We do this through voluntary programmes to promote worker and consumer health and safety, and through research. Cefic's Long-range Research Initiative, for example, is conducting significant work in this area. This is allowing sound understanding of biomonitoring results, providing a strong basis for future policy-making.

Biomonitoring results need to be interpreted properly

Cefic supports the use of biomonitoring as a tool to obtain additional exposure information. Biomonitoring should always be grounded in sound scientific and public health principles and should rely on validated analytical methods. Information obtained from biomonitoring is useful to define further research and to collect data on exposure trends over time. But biomonitoring programmes should not automatically trigger regulatory actions or product bans. There must be a risk-based process for interpreting biomonitoring results in the appropriate context, particularly if these are to be used for decision-making.

Without proper perspective, biomonitoring data can be misinterpreted and raise unnecessary alarm. Cefic believes that biomonitoring findings and their interpretation must be communicated in a public health context.



Cefic - The European Chemical Industry Council

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