Traces of Environmental Chemicals in the Human Body: Are They a Risk to Health?

By ACSH Staff — May 1, 2003

Executive Summary

Because living organisms, including humans, are part of the environment they reflect what is in their surroundings. Traces of a large variety of both natural and man-made compounds can be found in the tissues and fluids of humans as a result of exposure to these compounds in air, soil, water, food, and consumer products.

As analytical capabilities have improved, it has become possible to detect ever-increasing numbers of natural and synthetic environmental chemicals at lower and lower concentrations. The mere ability to measure or detect the presence of a substance in the body is not an indication that the substance poses any health risk, especially at the trace levels at which we can now detect them. It has also become clear that because of the persistent nature of some of these chemicals, they are likely to remain in humans for some time to come. Thus, concerns about the possible health impacts of these chemicals will likely continue to be raised.

To address these concerns, it is important to understand what the trends are in the levels of these trace contaminants and what the health impacts may be from the levels that are currently being detected in human fluids and tissues.

Evidence from analysis of foods and water, as well as from direct measurements of fluids and tissues, reveals that the levels of the synthetic contaminants have decreased greatly over recent time. Studies of lead and persistent organochlorine compounds, such as DDT and dieldrin, clearly document this trend and show a decrease of more than 90% during the last quarter of the 20th century. While the levels have continued to decrease in the last decade, the rate of decrease has slowed. In addition, the data reveal that there are some sub-populations that are still exposed to unusually high amounts of some of these contaminants.

As a result of these large decreases in concentrations, current levels of environmental chemicals in the general population are well below those considered to be associated with adverse effects and thus do not pose a risk to public health. Efforts to improve environmental health should thus
focus on those populations with especially high exposures; e.g., children living in homes with high levels of lead.

Traces © of Environmental © Chemicals in © the © Human © Body: Are They a Risk to Health? [2]