

Toxicology and Health-Risk Information

The *Third Report* presents new data on the exposure of the U.S. population to environmental chemicals. The measurement of an environmental chemical in a person's blood or urine does not by itself mean that the chemical causes disease. Advances in analytical methods allow us to measure lower and lower levels of environmental chemicals in people. Separate studies of varying exposure levels and health effects are required to determine which blood and urine levels are safe and which result in disease.

If available, generally recognized guidelines for blood or urine levels for each chemical are presented in the *Third Report* in the text discussion provided for each chemical or chemical group. These guidelines are usually from federal agencies. One exception is the American Conference of Governmental Industrial Hygienists (ACGIH), a private organization that publishes biological exposure indices (BEIs) which “generally indicate a concentration below which nearly all workers should not experience adverse health effects” (ACGIH, 2001). BEIs are blood or urine levels of a chemical that correspond to air-exposure limits for workers set by ACGIH. This organization notes that these values are for workers and that it is not appropriate to apply them to the general population. Information about the BEI level is provided here for comparison, not to imply that the BEI is a safety level for general population exposure. For most chemicals reported here, such guidelines are not available.

The *Report* also provides written information about each chemical or chemical group regarding uses, sources of human exposure, disposition in the body, and major effects, if known. In addition, selected studies have been provided, where possible, to permit comparison of blood and urine levels of a chemical in other population groups. Although the information in the text is provided as a brief overview for each chemical, it is not intended as a comprehensive review of each chemical. Generally, information was retrieved from major texts, consensus documents, and federal agency reviews, and then supplemented with published scientific investigations obtained by electronic searches in national and international databases.

Information Available on the Internet

Links to nonfederal organizations are provided solely as a service to our readers. These links do not constitute an endorsement of these organizations or their programs by CDC or the federal government. CDC is not responsible for the content of an individual organization's Web pages found at these links. For information about toxicology and health risks, see the following sites:

U.S. Government-Related Internet Links

Centers for Disease Control and Prevention (CDC) and Agency for Toxic Substances and Disease Registry (ATSDR)

- NIOSH Pocket Guide to Chemical Hazards: <http://www.cdc.gov/niosh/npg/npgd0000.html>
- Registry of Toxic Effects of Chemical Substances (RTECS): <http://www.cdc.gov/niosh/rtecs>
- Tobacco Information and Prevention Source: <http://www.cdc.gov/tobacco>
- National Center for Health Statistics: <http://www.cdc.gov/nchs>
- National Health and Nutrition Examination Survey: <http://www.cdc.gov/nchs/nhanes.htm>
- Childhood Lead Poisoning Prevention Program: <http://www.cdc.gov/nceh/lead/lead.htm>
- Pesticides and Public Health: Integrated Methods of Mosquito Management: <http://www.cdc.gov/ncidod/eid/vol7no1/rose.htm>
- National Institute for Occupational Safety and Health (NIOSH), Occupational Health and Safety Guidelines for Chemical Hazards: <http://www.cdc.gov/niosh/81-123.html>
- Agency for Toxic Substances and Disease Registry (ATSDR) Toxicological Profiles and ToxFAQs: <http://www.atsdr.cdc.gov/toxprofiles> or <http://www.atsdr.cdc.gov/toxfaq.html>

U.S. Department of Health and Human Services (U.S. DHHS)

- Environmental Health Policy Committee: <http://web.health.gov/environment>

U.S. Food and Drug Administration (U.S. FDA)

- Center for Devices and Radiological Health: <http://www.fda.gov/cdrh>
- Center for Food Safety and Applied Nutrition: <http://www.cfsan.fda.gov>
- National Center for Toxicological Research: <http://www.fda.gov/nctr>

National Institutes of Health (NIH)

- National Cancer Institute (NCI): <http://www.nci.nih.gov>
- National Institute of Child Health and Human Development (NICHD): <http://www.nichd.nih.gov>
- National Institute for Environmental Health Sciences (NIEHS): <http://www.niehs.nih.gov>
- National Toxicology Program (NTP) Chemical Health and Safety Data: <http://ntp.niehs.nih.gov/index.cfm?objectid=03610FA5-C828-304B-FE31F1182E8F764C>
- National Toxicology Program (NTP) Report on Carcinogens: <http://ntp.niehs.nih.gov/ntpweb/index.cfm?objectid=72016262-BDB7-CEBA-FA60E922B18C2540>
- Chemical Carcinogenesis Research Information System: <http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CCRIS>
- Hazardous Substances Data Bank (HSDB[®]): <http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB>

U.S. Environmental Protection Agency (U.S. EPA)

- Office of Air and Radiation (OAR): <http://www.epa.gov/oar>
- Office of Environmental Information (OEI): <http://www.epa.gov/oei>
- Office of Prevention, Pesticides, and Toxic Substances (OPPTS): <http://www.epa.gov/opptsmt/index.htm>
- Office of Research and Development (ORD): <http://www.epa.gov/ORD>
- Office of Water (OW): <http://www.epa.gov/OW>
- Office of Pesticide Programs: <http://www.epa.gov/pesticides>
- EPA Integrated Risk-Information System (IRIS): <http://www.epa.gov/iris>
- EPA Envirofacts: http://www.epa.gov/enviro/index_java.html
- Lead: <http://www.epa.gov/OGWDW/dwh/c-ioc/lead.html>

U.S. Department of Agriculture (USDA)

- Food Safety and Inspection Service: <http://www.fsis.usda.gov>
- USDA, Forest Service Pesticide Fact Sheets: <http://www.fs.fed.us/foresthealth/pesticide>

U.S. Department of Energy (DOE)

- Office of Environment, Safety and Health: <http://tis.eh.doe.gov/portal/home.htm>

U.S. Department of Housing and Urban Development (HUD)

- Office of Healthy Homes and Lead-Hazard Control: <http://www.hud.gov/offices/lead>

U.S. Consumer Product Safety Commission (CPSC)

- <http://www.cpsc.gov>

U.S. Department of Transportation (DOT)

- Hazardous Materials Emergency-Response Guidebook: <http://hazmat.dot.gov/pubs/erg/gydebook.htm>

U.S. Department of Labor, Occupational Safety and Health Administration (OSHA)

- <http://www.osha.gov/index.html>

Other Related Internet Sites

- American College of Occupational and Environmental Medicine: <http://www.acoem.org>
- Association of Occupational and Environmental Clinics: <http://www.aoec.org>
- Association of Public Health Laboratories: <http://www.aphl.org>
- Chemfinder: <http://www.chemfinder.com>
- International Chemical Safety Cards: <http://www.ilo.org/public/english/protection/safework/cis/products/icsc/dtasht/index.htm>
- International Programme on Chemical Safety (IPCS): <http://www.who.int/pcs>
- Material Safety Data Sheets (MSDS): www.hazard.com/msds
- National Research Council (NRC) Toxicological Effects of Methylmercury: <http://books.nap.edu/books/0309071402/html/index.html>