

BIOMONITORING CALIFORNIA



Frequently Asked Questions

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What is biomonitoring?

Biomonitoring is a technique for measuring chemicals in our bodies. It involves collecting a person's blood, urine, or another body fluid or tissue. These are then analyzed to see if certain chemicals are present, and at what levels. A good example of biomonitoring is the widespread testing of children's blood to make sure that they do not have high levels of lead. Lead can cause a number of serious health problems.

We come into contact with hundreds of environmental chemicals each day through the food we eat, the beverages we drink, the air we breathe, and the products we use. Biomonitoring can give us information about which chemicals get into our bodies and how much we have been exposed to. In addition, biomonitoring can provide information to help evaluate how well government programs protect people from harmful chemicals.

What is Biomonitoring California?

Biomonitoring California, also known as the California Environmental Contaminant Biomonitoring Program¹ was authorized by the State Legislature and became [law](#)² in 2006. Biomonitoring California collects biological specimens, such as blood and urine, from California residents and analyzes them for the presence of environmental chemicals. Portions of the biological samples are being stored for future analysis by Biomonitoring California, universities, and other researchers.

The goals of Biomonitoring California are to:

- 1) Determine levels of environmental chemicals in a representative sample of Californians;
- 2) Establish trends in the levels of these chemicals over time; and
- 3) Help assess the effectiveness of public health efforts and regulatory programs to reduce exposures of Californians to specific chemicals.

Biomonitoring California strives to ensure that Program materials are understandable and sensitive to the diverse needs of Californians. Opportunities for the public to offer input and advice on Program design and implementation are provided through workshops, meetings, surveys, and other methods. The Program takes into account suggestions from the public, including, for example, which chemicals to measure. Biomonitoring California also receives expert technical advice on Program design and implementation from a [Scientific Guidance Panel](#)³.

¹ Codified at Health and Safety Code section 105440 et seq.

² Senate Bill 1379, Perata, Chapter 599, Statutes of 2006; www.oehha.ca.gov/multimedia/biomon/pdf/sb_1379_bill_20060929.pdf

³ To read more about the Scientific Guidance Panel, visit www.oehha.ca.gov/multimedia/biomon/sqpbios.html

Who is carrying out Biomonitoring California?

Biomonitoring California is a collaborative effort of three departments in California State government:

- The California Department of Public Health (CDPH) www.cdph.ca.gov

CDPH is the lead department for Biomonitoring California. CDPH is responsible for study design, questionnaire development and administration, participant recruitment, clinic work, collection and processing of field specimens, chemical analysis, storage of specimens, data management and analysis, and returning results to participants. CDPH develops laboratory methods and tests for metals and non-persistent organic chemicals, and will communicate test results to participants. CDPH also provides secure long-term storage of some specimens for future testing. CDPH is carrying out these duties for the pilot projects already underway and will also lead any future statewide surveys.

- The Office of Environmental Health Hazard Assessment (OEHHA) www.oehha.ca.gov

OEHHA staffs and administers the Scientific Guidance Panel and provides scientific analyses to support the selection of chemicals for biomonitoring. OEHHA also conducts scientific research on the interpretation of biomonitoring results, including what levels of biomonitored chemicals may pose a health concern. OEHHA shares responsibilities with CDPH for data analysis, questionnaire design efforts, and public outreach. OEHHA maintains the Biomonitoring California website (www.biomonitoring.ca.gov), listserv, and email address (biomonitoring@oehha.ca.gov).

- The Department of Toxic Substances Control (DTSC) www.dtsc.ca.gov

DTSC develops laboratory methods and tests specimens for persistent organic compounds, such as brominated flame retardants, perfluorinated chemicals and other chemicals of emerging concern. DTSC also analyzes and interprets the data to evaluate the efficacy of its regulatory programs.

CDPH is in the California Health and Human Services Agency, while OEHHA and DTSC are in the California Environmental Protection Agency. The three departments will collaborate on reporting the Program's biomonitoring results to the general public.

Why is biomonitoring important? What difference will it make to the health of Californians?

Biomonitoring California was created to identify the presence of toxic chemicals in Californians. This knowledge can help shape public health and environmental policies. Through biomonitoring we can better understand Californians' exposures to environmental chemicals. For example, this information can show whether exposures to certain chemicals are increasing or decreasing, and whether some groups of people are more exposed than others to specific substances. Scientists can use this information to explore whether exposures to certain chemicals may contribute to the

development of specific diseases. It can be used to help evaluate environmental protection programs and, as appropriate, make changes to improve the health of Californians.

Who will be biomonitoring?

The enabling legislation directs the Program to recruit participants who reflect the “age, economic, racial, and ethnic composition” of California’s population. The intent of the law is to provide a statewide “snapshot” of environmental chemical exposures in a representative group of Californians.

The law also authorizes the Program to conduct community studies that are statistically valid and scientifically based. Communities may include populations living in a particular geographic area, or populations experiencing a common health outcome. Communities may also include individuals who may share common chemical exposures related to occupation, lifestyle, ethnicity, gender, age or other characteristics. Biomonitoring California is starting out with small pilot projects in specific communities or populations. Eventually, with adequate funding, the Program will track statewide exposure trends over time, as well as examine community exposures.

In pilot projects and statewide studies, potential participants will be identified and contacted by Biomonitoring California staff. Participation is entirely voluntary.

Can I volunteer to be tested?

No. For a statewide survey or community-based studies to be scientifically valid, participants must be chosen using generally accepted statistical principles for sampling populations. Members of the public who contact Biomonitoring California asking to have their blood or urine analyzed cannot be included, as this would undermine the scientific validity of the studies.

What kinds of information and samples will be collected from participants?

Participants will likely be asked about their age, race/ethnicity, gender, occupation, health status, diet, and certain activities. Participants will also have their height and weight measured. Blood and urine samples will be collected and analyzed.

Participants can receive their own biomonitoring results upon request. Information to help them understand their results, such as the average levels of chemicals found in the entire group of participants, will also be provided. Personal data, including chemical analysis results for an individual’s blood and urine, will be kept strictly confidential, as required by law.

Any reports summarizing the results of blood and urine testing will not disclose information about any specific individual.

Which chemicals will be selected for biomonitoring in California?

The selection of chemicals proceeds by a two-step process. The first step is to identify “designated chemicals” – those chemicals that should be considered for biomonitoring. Under the enabling legislation, the roughly 300 chemicals currently biomonitored by the U.S. Centers for Disease Control and Prevention (CDC) were identified as the initial set of designated chemicals. The Scientific Guidance Panel can recommend additional designated chemicals using specific criteria. You can find the most current list of designated chemicals by following this link:

<http://www.oehha.ca.gov/multimedia/biomon/pdf/DesignatedChemCurrent.pdf>.

Biomonitoring California will not be able to analyze all of the designated chemicals. Therefore, the second step is to identify chemicals of high priority for biomonitoring in California. The Scientific Guidance Panel makes recommendations regarding which chemicals should be given priority. You can find the most current list of “priority chemicals” by following this link:

<http://www.oehha.ca.gov/multimedia/biomon/pdf/PriorityChemsCurrent.pdf>.

The Program determines which chemicals are actually biomonitored, as directed by the enabling legislation.

The Program carried out a process in 2008 to consult with the public as well as state scientists on chemical selection issues. More details on these efforts can be found here: www.oehha.ca.gov/multimedia/biomon/reports.html#state.

Chemical selection is also regularly discussed at Scientific Guidance Panel meetings. Members of the public have an opportunity at these meetings to comment on which chemicals should be considered. To find the date and location of upcoming Panel meetings and the meeting agenda, visit www.biomonitoring.ca.gov or contact Biomonitoring California at biomonitoring@oehha.ca.gov.

What is the Scientific Guidance Panel?

The nine-member [Scientific Guidance Panel](#), consisting of expert scientists appointed by the Governor and the State Legislature, plays a major role in Biomonitoring California. Panel members provide scientific review of the Program design and implementation, and make recommendations on the chemicals to be biomonitored.

By law the panel meets at least three times a year. Panel meetings are open to the public and are conducted in accordance with the [Bagley-Keene Open Meetings Act](#)⁴. Many of the meetings can be attended remotely via video or audio webcast. For information on attending an upcoming Scientific Guidance Panel meeting, or to find out about past Panel meetings, visit www.biomonitoring.ca.gov.

⁴ To read about Bagley-Keene visit <http://www.ag.ca.gov/publications/bagleykeene.pdf>

What is the role of the federal Centers for Disease Control and Prevention (“CDC”) in Biomonitoring California?

The federal Centers for Disease Control and Prevention (CDC) conducts a national biomonitoring program. The CDC provides technical assistance and consultation to Biomonitoring California in the areas of sampling strategy, data collection methods, and data management systems. CDC laboratory staff also share chemical analysis methods with state laboratories and train state laboratory staff. CDC personnel will also help Biomonitoring California develop rigorous protocols to ensure that blood, urine, and other biological specimens are tested in the most accurate and valid manner.

When will biomonitoring results be available?

Biomonitoring California is working on several pilot projects right now. Results will begin to be available in the next few years. As specified in the legislation, participants can receive their individual results upon request. The Program will develop public and legislative reports that summarize biomonitoring results, without revealing any identifying or confidential information. These reports will be made available through the Biomonitoring California website (www.biomonitoring.ca.gov).

How can the public become involved with Biomonitoring California?

Public input is critical to the implementation of Biomonitoring California. Opportunities to provide input on different aspects of implementation, including selecting chemicals to be measured, will be available at public meetings and workshops, Scientific Guidance Panel meetings, and via internet-based surveys.

Here’s how you can learn more about Biomonitoring California activities:

- Visit the Biomonitoring California website at www.biomonitoring.ca.gov.
- Subscribe to the free biomonitoring listserv. This can be done by visiting www.biomonitoring.ca.gov and clicking on the words “Join the Biomonitoring Listserv” in the right-hand column. Subscribers will receive e-mail notifications about Program updates and opportunities to participate in the implementation of the Program, including public meetings, workshop announcements, and other calls for public participation.
- Attend Scientific Guidance Panel meetings. You can attend in-person or via the web. There will be opportunities to ask questions and provide comments at the meetings and via e-mail.
- Participate in public meetings, workshops, and teleconferences on specific topics. These will be announced via the Program website and the biomonitoring listserv.

If you do not have easy access to e-mail and would like to be informed about the Program by regular mail, please send your name, address, and phone number to: Amy Dunn, OEHHA, 1515 Clay Street, 16th floor, Oakland, CA 94612, or call 510-622-3183.

If you have additional questions about this program, please contact the Biomonitoring California staff at the following e-mail address: biomonitoring@oehha.ca.gov.

What can I do if I am concerned about exposure to a toxic chemical?

If you think you have been exposed to harmful chemicals at work, please visit the website of the Occupational Health Branch, California Department of Public Health, at www.cdph.ca.gov/programs/ohb or call the Workplace Hazard Helpline (866) 282-5516 for more information.

For possible chemical exposures that are not work-related, please talk with your physician or health-care provider. Being exposed to a toxic chemical or finding the chemical in your body does not, by itself, indicate that you have or will have a health problem. Also, for most chemicals that have been studied, effects are generally more severe or more likely to occur with high, rather than low, levels of exposure. For some chemicals, like the metal lead, we have a very good understanding of the blood levels that cause serious health effects in infants, children and adults. For most chemicals, however, we do not know the relationship between levels in the blood and health effects.

If you would like to find out more about preventing childhood lead poisoning visit: www.cdph.ca.gov/programs/CLPPB/Pages/default.aspx.

Scientists analyze information from animal and human studies to understand the levels at which chemicals are likely to be harmful. However, most chemicals in use today have not been thoroughly studied regarding their potential toxicity to humans.

Where can I find more information about toxics and environmental health issues?

For more information about biomonitoring, go to the CDC's National Biomonitoring Program at www.cdc.gov/biomonitoring.

More information about the toxic effects of specific chemicals is available at the following sites.

- Toxic air contaminants: www.oehha.ca.gov/air/toxic_contaminants/index.html or www.epa.gov/ebtpages/airairpollutants.html
- Drinking water contaminants: www.oehha.ca.gov/water/phg/allphgs.html
- Carcinogens and reproductive toxicants: www.oehha.ca.gov/prop65.html
- Pesticides: www.oehha.ca.gov/pesticides.html, www.epa.gov/pesticides, and www.cdpr.ca.gov/docs/dept/comguide/index.htm

Additional information can be found on the following federal government sites:

- U.S. Agency for Toxic Substances and Disease Registry (ATSDR): www.atsdr.cdc.gov
- U.S. Environmental Protection Agency: www.epa.gov; www.epa.gov/tri

- U.S. National Center for Environmental Health, CDC: www.cdc.gov/nceh
- U.S. National Institute for Occupational Health and Safety: www.cdc.gov/niosh

See also the following international sites:

- European Human Biomonitoring program: www.eu-humanbiomonitoring.org
- European Chemical Substances Information System:
<http://ecb.jrc.ec.europa.eu/esis/>
- World Health Organization, International Program on Chemical Safety:
www.who.int/ipcs/publications/ehc/ehc_alphabetical/en/index.html
- International Agency for Research on Cancer (IARC) Monograph program site:
<http://monographs.iarc.fr/>

Private sector and nongovernmental organizations also sponsor websites with information on biomonitoring and chemical toxicity. Several of these websites are listed below as potential additional resources for the public. Any opinions, statements or conclusions provided at any of these websites are those of the websites' sponsors and are not necessarily those of Biomonitoring California, CDPH, OEHHA or DTSC. Listing of these sites does not represent any actual or implied endorsement by Biomonitoring California, CDPH, OEHHA or DTSC.

- American Chemistry Council: www.americanchemistry.com
- Biomonitoring Info: www.biomonitoringinfo.org
- Environmental Defense Fund (Scorecard link): www.scorecard.org
- Environmental Working Group: www.ewg.org
- National Resources Defense Council: www.nrdc.org
- Worksafe: www.worksafe.org

