

## **Biomonitoring California Workshop**

### **Understanding and Interpreting Biomonitoring Results**

Elihu Harris M. Harris State Office Building, Auditorium  
1515 Clay Street, Oakland, CA

**March 17, 2011**

#### **Workshop objectives**

Biomonitoring California is holding a public workshop on understanding and interpreting biomonitoring results. The objectives of the workshop are to:

- Discuss approaches for understanding and interpreting biomonitoring results, including strengths and weaknesses
- Discuss methods for developing comparison levels in blood or urine
- Discuss scientific challenges with interpreting biomonitoring results, including how to address multiple chemical exposures and sensitive sub-populations
- Provide guidance to Biomonitoring California on approaches for understanding and interpreting biomonitoring results

#### **Background**

The California Environmental Contaminant Biomonitoring Program (also called Biomonitoring California) was established to determine the levels of environmental chemicals in Californians over time. The establishing legislation requires Biomonitoring California to return individual results to participants who have been tested and who request their results. Biomonitoring California also advises individuals on follow up actions if their results are considered medically relevant. Biomonitoring results will help California evaluate whether existing regulatory programs and public health actions to reduce particular chemical exposures are effective.

Speakers will give their perspectives on ways to interpret and provide context for biomonitoring results. Presenters may offer approaches for understanding results from larger population surveys or community-based studies, or for providing context when communicating individual results. The workshop will highlight lessons learned from past biomonitoring studies. Speakers will discuss potential challenges with various approaches for understanding and interpreting results. Analytical issues that could affect interpretation of results will also be considered.

One way to provide a point of comparison for biomonitoring results in California is to look at what has been found in other populations. For a few chemicals, levels in

biological media have been used to derive environmental guidance values and could be compared to biomonitoring results. For example, the California Public Health Goal for cadmium in drinking water is set to protect against kidney effects and was derived based on cadmium levels in urine. However, for the majority of chemicals being biomonitored, the health consequences of measured levels are not well understood.

Methods to derive comparison levels will be discussed at the workshop, including methods based on pharmacokinetic calculations. The significant scientific challenges associated with developing comparison values will be discussed, such as the limited availability of toxicological and pharmacokinetic data and how to account for multiple chemicals that act in the same way or result in the same health effect. Speakers will also address the need to take into account sensitive populations and provide context for individuals with unusually high blood or urine levels of a chemical.

