Biomonitoring Chemicals with Short Half-lives in Humans: Issues in Interpreting and Communicating Individual Results

Materials for: July 26, 2012 Meeting of Scientific Guidance Panel (SGP)
Biomonitoring California[1]

For chemicals with short half-lives, biomonitoring measurements can be very variable over short periods of time. An individual result does not necessarily characterize a person's exposure to a chemical over time; even a short time, like a day or week. Biomonitoring California is in the process of developing results return materials for a broad range of chemicals, including those with short half-lives. Part of this process involves usability testing of draft materials with a small set of participants. As another part of this process, we are seeking SGP input on the following discussion questions:

- What additional context, if any, might be important to provide to participants on interpreting their individual results for chemicals with short half-lives, beyond the standard template? What basic messages do you suggest we try to convey?
  (See this link for an example of the template: http://www.oehha.ca.gov/multimedia/biomon/pdf/03162012FOXMockResultsPacket.pdf)

- One approach to providing context would be to give information to participants about how the half-life of a chemical could affect their individual results. If we chose this approach, what type of information would be most important to include on half-life and how do you suggest we frame such information?

- Half-life is only one of many factors that affect an individual's results for a given chemical. Which other relevant factors do you think would be important to explain to participants? For example:
  - Repeated exposures, such as via routine product use
  - Timing of when a biological sample is taken, such as after a meal

- Do you have other comments on interpreting and/or communicating biomonitoring results for chemicals with short half-lives, from your background reading or your own experience?

Selected Background References (those marked with an asterisk [*] were sent to the SGP):

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[1]California Environmental Contaminant Biomonitoring Program, codified at Health and Safety Code section 105440 et seq.

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*Ye X et al. (2011). Variability of urinary concentrations of bisphenol A in spot samples, first morning voids, and 24-hour collections. Environmental Health Perspectives, 119(7):983-988.