Selecting Chemicals for the California Biomonitoring Program

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California Biomonitoring Program

Public Input Session

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Oakland

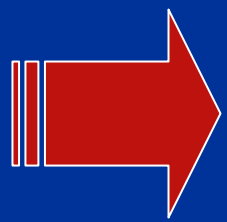
Overview

- Selecting chemicals per the legislation
- Designated Chemicals
  - the “CDC” list
- Examples of Chemicals
- Choosing from among the possible chemicals
  - Selection criteria
  - Discussion

Selecting Chemicals to Include in California's Program

Two Step Process

Identify "Designated Chemicals"



Selecting priority chemicals to biomonitor in California

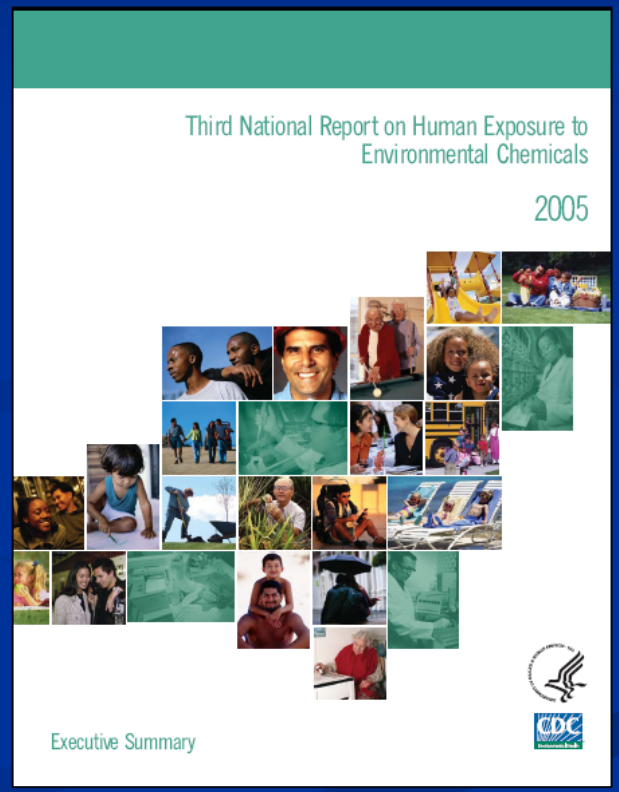
Designated chemicals

- Chemicals included in the national biomonitoring program carried out by the Centers for Disease Control and Prevention (CDC)
- Chemicals added by the Scientific Guidance Panel ***(with public input)***

Designated Chemicals

National Report on Human Exposure to Environmental Chemicals, CDC

1st report 2001	27 chemicals 1999
2nd report 2003	116 chemicals 1999-2000
3rd report 2005	148 chemicals 2001-2002
4th report Release - Late 2008	~250 chemicals



CDC's 2003-2004 List

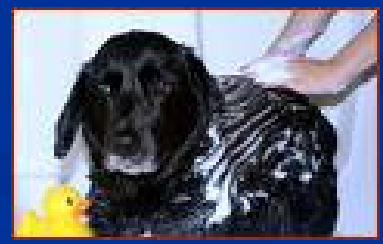
- Metals
- Phthalates
- Polycyclic Aromatic Hydrocarbons
- Tobacco Smoke
- Phytoestrogens
- Pesticides, Fungicides, Herbicides
- Environmental Phenols
- Dioxins, furans, polychlorinated biphenyls (PCBs)
- Polybrominated Diphenyl Ethers (PBDEs)
- Perfluorinated Compounds
- Volatile Organic Compounds
- Other

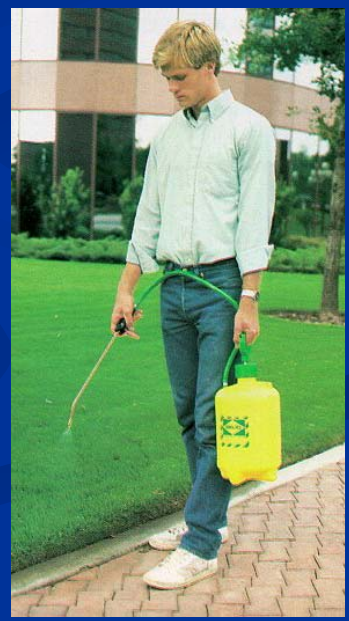
Metals

- Examples: lead, mercury, cadmium, arsenic, etc.
- Possible health effects
  - affect brain development, nervous system (e.g., lead, mercury)
  - affect growth and development
  - cancer
- Ways people get exposed
  - Water, food, air, soil/dust, consumer products

Chemicals in Pesticides, Herbicides, Fungicides

- Used in farming, homes, yards, schools
- Examples – weed killers, organophosphate insecticides, pyrethroids, slug/snail bait
- Possible health effects
  - affect hormones
  - affect growth and development in children
  - affect nervous system
- Ways people get exposed
  - air, soil/dust, water, food, skin
  - use of insect foggers, flea dips & sprays, lice shampoos, etc.





Questions??

Comments??

Chemicals in consumer products

- Used in plastics, personal care products, electronics, furniture, cleaning supplies, clothing, etc.
- Examples: phthalates, bisphenol A, PBDEs, perfluorinated compounds, volatile organic compounds (VOC's)
- Possible health effects
  - affect hormones
  - affect growth and development in children
  - cancer
- Ways people get exposed
  - air, water, food, dust, skin

Chemicals from burning

- Burning trash, oil, gasoline, diesel
- Examples: dioxins, furans, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs)
- Possible health effects:
  - cancer
  - affect fetal and child growth and development
  - affect hormones, immune system
- Ways people are exposed
  - air, food

Questions??

Comments??

Chemicals in drinking water

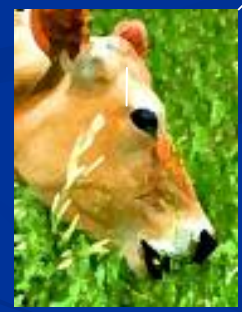
- Examples:
  - medications
  - personal care products (e.g, sunscreens, cosmetics)
  - water disinfection by-products
  - pesticides
  - industrial chemicals
- Possible health effects
  - cancer
  - affect fetal growth and child development
  - affect nervous system
  - affect hormones
- Additional ways people get exposed
  - beverages, food

Chemicals in Food

- Transfer into food or formed during cooking
- Examples: pesticides, PBDEs, bisphenol A, PAHs, acrylamide
- Possible health effects
  - depend on the chemical
  - depend on timing and length of exposure
- Ways people get exposed
  - eating, drinking, breathing
  - transfer into food from packaging/containers








Questions??

Comments??

- What chemicals do you think the Program should biomonitor?
  - On the CDC list
  - Not included on the CDC list

Overview

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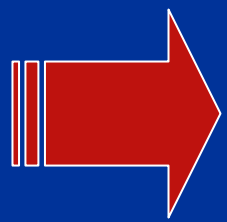

Select priority chemicals to biomonitor in California

Step 2: Choosing what to sample: Deciding on priority chemicals

- Criteria that are in legislation
- Possible criteria or priority areas to add

Selecting Priority Chemicals

The California Biomonitoring Program will initially measure only a subset of designated chemicals

- Choosing which chemicals to measure is difficult, given all the possibilities

Legislative Criteria for Selecting Priority Chemicals

- Degree of potential exposure
- Likelihood of chemical being a carcinogen or toxicant
- Limits of laboratory detection – ability to detect the chemical at low levels
- **Other criteria** the panel agrees to use

Possible new criteria for selecting priority chemicals

1. Widely used throughout California
   - Most people are affected

2. Help government decide how well environmental laws are working
   - Look for ways to improve public health protection

Possible new criteria for selecting priority chemicals

3. New emerging chemicals or chemicals now becoming widely used
   - Find out about exposures before problems occur

4. Exposure in the workplace
   - Levels may be highest

Possible new criteria for selecting priority chemicals

5. Studied nationally
   - Compare California results to those for the country as a whole

6. Not studied nationally
   - Find out about chemical exposures the federal government isn't investigating

Possible new criteria for selecting priority chemicals

7. State-specific activities or regulations – such as farming, mining, oil refining, or stricter flammability standards

   - Focus on chemicals expected to be higher in Californians

Possible new criteria for selecting priority chemicals

8. Pregnant women, fetuses and children are likely to be especially sensitive
   - Concern about the next generation

9. Persist in the environment and can accumulate in people's bodies
   - Look for chemicals that might be building up

Discussion: what issues do you think should be considered as part of the decision-making?

Criteria in legislation

- Degree of exposure
- Likely to cause cancer or other toxicity
- Laboratory detection limits

Possible additions

- Wide-spread use
- Effect of environmental laws
- Emerging chemicals
- Workplace exposure
- Studied nationally
- Not studied nationally
- State-specific activities
- Impact pregnant women, fetuses, children
- Persist in environment and accumulate in humans
- **Others you suggest**

California Biomonitoring Program

Visit our website www.oehha.ca.gov
& click on "Biomonitoring"

- Join the listserv - click on "Stay Informed"
- Take the Chemical Selection Survey
- Contact: biomonitoring@oehha.ca.gov