



COUNTY OF LOS ANGELES

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Presence of Chromium 6 in Local Water Supplies
Board Meeting Discussion Points
September 18, 2012

Questions and Responses from the Los Angeles County Department of Public Health

1. Who determines when drinking water is safe and standards have been met?

The California Department of Public Health (CDPH) sets standards for drinking water safety, including Maximum Contaminant Levels (MCLs), and works with local Water Districts to determine when those standards have been met or when they have been exceeded.

2. What is a Maximum Contaminant Level (MCL)?

An MCL is the legal threshold limit on the amount a certain substance is allowed in public water systems under the Safe Drinking Water Act. These health-protective drinking water standards are set and enforced by CDPH, and are to be met by public water systems.

MCLs take into account:

- Health risks from exposure to a chemical,
- Technological factors such as detectability and treatability, and
- Costs of treatment to reduce a chemical's presence in drinking water.

3. Is drinking water safe when a contaminant exceeds the Maximum Contaminant Level (MCL)?

Exceeding the Maximum Contaminant Level does not automatically mean that the public is at risk. MCLs are deliberately set well below levels at which health effects would be expected in order to allow for appropriate measures to be enacted when MCLs are exceeded. Additionally, exceeding the MCL requires action on the part of local Water Districts to bring the drinking water back into compliance.

4. Is there an MCL for Chromium-6 in California?

There is no MCL specifically for Chromium-6 in the state of California. Currently, there is an MCL for TOTAL Chromium that is set at 50ppb (parts per billion). Total Chromium comprises

differing forms of Chromium, including Chromium-6 and Chromium-3. CDPH is currently reviewing data in order to propose an MCL for Chromium-6 as early as July 2013.

5. What is a Public Health Goal?

A Public Health Goal (PHG) is a proposed contaminant level guideline, published by the California State Office of Environmental Health Hazard Assessment (OEHHA), which is part of the California Environmental Protection Agency. A PHG is **not** an enforceable drinking water standard. A PHG is based on review of animal and human research data, without regard to technological factors such as detectability and treatability, or the costs of treatment to reduce a chemical's presence in drinking water. A PHG is generally set lower than the anticipated MCL, because chemicals tend to cause toxicities in animals at doses that are much lower than doses required for human toxicity.

6. Is drinking water safe when a contaminant exceeds the Public Health Goal (PHG)?

OEHHA proposes a PHG with the idea that adverse health effects would not be expected below the PHG. In determining a PHG, OEHHA primarily takes into account theoretical cancer risk in large populations over long-term (i.e. lifetime) exposure. For Chromium-6, OEHHA estimates that for every one million persons who drink ALL of their daily drinking water from tap water with a Chromium-6 level of 0.02ppb – every day for 70 consecutive years – there is expected to be one (1) additional case of cancer in that one-million-person population. OEHHA's calculations are based primarily on animal studies, and do not take into account the comparative biology of animals-to-humans, technological feasibility, detectability, treatability, or cost. Thus, PHGs are proposed guidelines that CDPH may or may not utilize in order to adopt an enforceable drinking water standard (MCL).

7. In this case, the PHG for Chromium 6 is 0.02ppb and Glendale's drinking water routinely tests at 5 ppb. What is the Public Health risk for the residents of Glendale since the city's drinking water supply routinely exceeds the PHG?

Based on these numbers alone, this is not possible to determine. These numbers are calculated and interpreted broadly for large populations and within the context of animal research and sparse data on humans. When CDPH adopts an MCL for Chromium-6, this level will become the enforceable drinking water standard. Many local Water Districts, including Glendale, are in the process of implementing technologies to remove Chromium-6 from drinking water.

Based on experience with human exposure to Chromium-6 in general, we can say the following:

- 1) Human cases of cancer from ingestion of Chromium-6 have not been reported conclusively in the scientific literature. Rather, human cancer from Chromium-6 occurs primarily in the form of nasal and respiratory cancer from inhalation of Chromium-6 dust.
- 2) Elevated levels of Chromium-6 in drinking water have occurred in multiple areas across the United States. Studies of populations drinking from these waters have not established a conclusive link between drinking Chromium-6 and human toxicity, including cancer.

8. What percentage of water systems in the state routinely detects Chromium 6 above the PHG?

There are no data available as a comparison for water systems. The data provided by CDPH provides information about water sources with detectable levels of Chromium-6, divided by county. These data do not show whether or not these sources are actually utilized for drinking water.

9. What can people do to reduce their potential exposure to Chromium-6?

As it is, a high percentage of people do not receive 100% of their daily drinking water from tap water. Juices and bottled water may provide an alternative for people who are concerned. However, these sources do not necessarily contain any less Chromium-6 than what is found in municipal water sources. More broadly, people should understand that there is insufficient scientific evidence for elevated human cancer risk from Chromium-6 in drinking water.