



City of Lake Elsinore • City of Canyon Lake • County of Riverside  
Elsinore Valley Municipal Water District • Santa Ana Watershed Project Authority

## The Relationship between Aluminum Exposure and Alzheimer's Disease

### 1) Alzheimer's Association

"During the 1960s and 1970s, aluminum emerged as a possible suspect in Alzheimer's. This suspicion led to concern about exposure to aluminum through everyday sources such as pots and pans, beverage cans, antacids and antiperspirants. Since then, studies have failed to confirm any role for aluminum in causing Alzheimer's. Experts today focus on other areas of research, and few believe that everyday sources of aluminum pose any threat."<sup>1</sup>

### 2) Alzheimer's Society

"The main sources of aluminum in our diet include tea, beer, baked products, drinking water, toothpaste, aluminum-based antacids, aluminum cookware and some canned beverages. Aluminum uptake from our diets is usually very low, with more than 99% passing through the digestive track unabsorbed... Since the idea that the metal might be a risk factor for Alzheimer's disease was first proposed there have been numerous conferences on aluminum and health. The medical research community, international and government regulatory agencies and the aluminum industry all review the evidence at frequent intervals. The overwhelming medical and scientific opinion is that the findings do not demonstrate a convincing causal relationship between aluminum and Alzheimer's disease, and that no useful or public health recommendations can be made at present."<sup>2</sup>

### 3) World Health Organization (WHO)

"The conclusion of a recent Joint Expert Committee on Food Additives (JECFA) evaluation was that some of the epidemiology studies suggest the possibility of an association of Alzheimer disease with aluminum in water, but other studies do not confirm this association... All studies lack information on ingestion of aluminum from food and how concentrations of aluminum in food affect the association between aluminum in water and Alzheimer's disease... Taken together, the relative risks for Alzheimer's disease from exposure to aluminum in drinking-water above 0.1 mg/l, as determined in these studies, are low."<sup>3</sup>

### 4) California Office of Environmental Health Hazard Assessment (OEHHA)

"Aluminum exposure via drinking water has been associated with Alzheimer's disease (AD) and other dementia, but no causal link has been established and other factors are likely to be the major causes of AD... Aluminum in potable drinking water constitutes a small fraction of total daily intake (<10%)... Results from [intake-excretion] balance studies in humans demonstrate that gastrointestinal adsorption of aluminum is very low (<1%). Aluminum absorption from municipal tap water was 0.22% [one-quarter of 1%] in human subjects... In the absence of a conclusive causal link between aluminum and Alzheimer's disease some authors have argued that the cost of aluminum reduction [in drinking water] is low compared to the high cost of the AD even if aluminum is only a minor factor in the disease process. However, OEHHA concludes that the evidence is insufficient to support this recommendation."<sup>4</sup>

<sup>1</sup> See [http://www.alz.org/alzheimers\\_disease\\_myths\\_about\\_alzheimers.asp?gclid=CNmZ45Wf-LQCFQ45nAod6EsA3g](http://www.alz.org/alzheimers_disease_myths_about_alzheimers.asp?gclid=CNmZ45Wf-LQCFQ45nAod6EsA3g)

<sup>2</sup> See [http://alzheimers.org.uk/site/scripts/documents\\_info.php?documentID=99](http://alzheimers.org.uk/site/scripts/documents_info.php?documentID=99) (Sept., 2008)

<sup>3</sup> World Health Organization. Aluminum in Drinking Water. WHO/HSE/WSH/10.01/13 (2010)

<sup>4</sup> California Office of Environmental Health Hazard Assessment. Public Health Goal for Aluminum in Drinking Water. April, 2001.