

EM9507: The Globe and Mail, March 31, 1995, pages A1, A11

# Aluminum in drinking water poses no risk, Canadians told

Federal health officials deluged by worried callers

BY WALLACE IMMEN  
The Globe and Mail

Dr. Barry Thomas spent yesterday assuring Canadians that their water is safe to drink.

After announcing that the federal Health Department will ask for limits on the amount of aluminum added to drinking water during treatment, he was deluged with calls from worried officials and inquiring media.

"As far as we can tell, there is no evidence there is a health risk anywhere in Canada," Dr. Thomas, head of the criteria section of Health Canada's environmental health directorate, said in a telephone interview.

But he added that enough questions have been raised about the effects of aluminum on the brain that "we would be remiss if we didn't establish a safe limit."

Aluminum sulphate, known as alum, is used by treatment plants across Canada to purify water.

But until now, no one has monitored how much of the substance gets into the water people drink.

Recently reported studies in Australia, Canada and Britain indicate that inorganic aluminum is particularly adept at getting into the bloodstream and collecting in brain tissue, Dr. Thomas said. This kind of aluminum, also called free aluminum, binds easily with body tissue.

The connection between aluminum and memory impairment was not seen clearly in the past because previous studies did not have the sophisticated ways of interpreting the data that are available today, said Dr. William Forbes, a gerontologist and distin-

guished professor emeritus of the University of Waterloo.

In a 35-year study of 2,000 men, Dr. Forbes found that the incidence of memory loss was up to 10 times higher in areas of Canada with high aluminum levels in the water.

In the past, there were wide variations in the way that water was treated, but since the 1980s more rigorous provincial standards have resulted in most cities reducing the amounts of alum used in water treatment.

Officials believe that forms of aluminum other than free aluminum pose little risk.

"Aluminum is the third-most-common element in the world; the body is designed to reject natural aluminum in food and water. Only a trace gets into the system," Dr. Thomas assured people who are concerned about the potential for long-term exposure.

Other assurances came from industry and researchers:

- "We've been getting calls from people asking whether they should throw out their aluminum pots and pans," said Steve Rudin, a spokesman for the Alzheimer Society of Canada. Alzheimer's disease affects about 250,000 Canadians. Aluminum cookware was one of the original suspects in Alzheimer's, but the aluminum from pots is not readily absorbed in the body. The amount that enters food is minute, even if you stew acidic food in an aluminum pot, a spokesman for Alcan Aluminium Ltd. said.

- Aluminum cans are coated with lacquer or plastic to prevent food or drinks from picking up any metal, the Alcan representative added.

- Antacids contain aluminum and some

people take many tablets a day. "You might think this would add a lot of aluminum, but studies show it doesn't seem to make much difference," Dr. Forbes said. After a controversy five years ago, antacid makers reduced the amount of aluminum in their products.

- Deodorants contain aluminum compounds, but it is a coating on the outside of the skin and tends not to be absorbed.

- Many Canadian communities have high natural levels of aluminum in their water. Factors such as acid rain increase aluminum levels. In Newfoundland and Manitoba, for instance, naturally acidic water absorbs more aluminum from the soil. But this aluminum is the organic, or bound, form, and does not pose a risk, Dr. Thomas said.

Existing provincial recommendations on the level of alum are set for technical reasons, rather than health concerns.

A meeting on setting a health standard will be called this year, but Dr. Thomas has no idea what the final number will be. He said cities that reported to him yesterday indicated that their water had free aluminum in a range from 100 to 200 micrograms per litre of water.

Anything below 200 is considered a safe range, although Dr. Forbes said his study found a high risk of memory impairment in men who drank water with more than 215 micrograms per litre.

Meanwhile, treatment plants will continue to use alum. Alternatives are either more expensive or not as effective in eliminating contaminants from water, said Larry Williams of Alberta's environmental protection agency.

The article EM9507 reprinted above is used in Figure 15.1 of the STAT 231 Course Materials.