The Aluminum Legacy

Is the Smart Metal Destroying Our Brains?

By D. Raymond Schmidt

Since its introduction to the world in 1788, aluminum has penetrated nearly every aspect of post industrial-age civilized life. Beverage cans, aircraft and automobile parts, bicycles, utensils, household fixtures, the letter opener on your desk: the light and durable metal is everywhere.

Aluminum is the third most abundant element in the Earth's crust, after oxygen and silicon. A wide range of engineering uses have been found for aluminum and has resulted in a world-wide consumption of more than 22 million tons in 1986, a figure that rises yearly. Aluminum in buildings, kitchen equipment, and modern aircraft makes it hard to get off the ground without it.

Aluminum-rich consumer goods are everywhere. The discovery of aluminum as a health threat was only revealed in the 1970 link between high aluminum levels in tap water used for renal dialysis equipment and the accumulation of the element in human brain tissue, and possibly with dialysis dementia.

"Normal" plasma concentrations of aluminum in humans are very low. All humans are exposed constantly to oxygen, silicon and aluminum from dust and dirt. Though it does not appear to serve any useful biochemical function, exposure to aluminum in the environment and diet has not in general been considered detrimental to health. The nonpermeability of the alimentary tract toward aluminum would seem to be essential to human well-being. In the past, by reason of its chemical nature, it has been effectively excluded from "normal" biochemical and metabolic processes but now more than ever we are exposed to various sources.

Foods containing aluminum usually have the element added as a preservative. Recent scientific evidence points to aluminum as the culprit in many ailments.

Scientists have long believed that when digested by humans, aluminum is not able to pass into the bloodstream. If small amounts do, they are rapidly excreted by the normal renal (kidney) mechanisms.

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However, early in 1980 the first scientific paper appeared about aluminum in Alzheimer's disease and its toxic effect in animals. Since aluminum has no known biological function in higher animals, the discovery of localized high concentrations of the metal in two of the characteristic pathological features of brains of patients with Alzheimer's Disease suggests that it may be responsible for causing the disease. Alzheimer's brains have nine times as much aluminum as the normal brain.

Some water systems use aluminum sulfate as a coagulant to remove suspended particulate matter. Acid rain (as sulfuric acid) releases aluminum that can be absorbed by humans. In Norway, some lakes have a pH level of 5, which is very acidic. The high levels of acidity cause the aluminum in the lake to change into a soluble form that can be absorbed.

Studies should investigate some of the many environmental sources of aluminum, and find out where and when they come into contact with acidic substances.

Unfortunately there is very little research being done to determine what products are most harmful. The more acidic a food or drink that is in contact with aluminum, the more likely the aluminum will penetrate into the human biological system. If chemists could identify which products are likely to be harmful to humans, we should eliminate them from supermarket shelves.

It would be prudent to avoid ingesting aluminum. Anyone interested in maintaining optimum health should be advised to carefully read labels of everything they eat.

A Few of Many Products That Contain Aluminum:

(Some products contain high levels of aluminum, others only minimal.)

Toothpaste
Antacid
Anti-diarrhea Compounds
Buffered Aspirin
Lipstick
Deodorants
Face Creams and Soaps
Table Salt
Processed Cheese
Aluminum cookware & foil
Food, beer & soft drinks in cans