



ALUMINIUM AND ALZHEIMER'S DISEASE

KEY POINTS

- Alzheimer's Disease is a form of dementia that mostly affects elderly people.
- There is intensive research underway to find the causes of Alzheimer's Disease. Though it is not known what causes Alzheimer's Disease, there are often contributing links to factors such as genetic makeup and head trauma, while life-long learning is shown to inhibit the expression of the disease.
- Recent findings from scientific research to date have shown that exposure to aluminium in consumer products does not cause Alzheimer's Disease, or other types of dementia or neurological diseases.

Alzheimer's Disease is one type of dementia that affects predominantly older people. There is a great deal of research carried out to understand the cause, or causes, of Alzheimer's Disease, but so far a clear cause has not been identified. Links to genetic factors have been established for some types of the disease.

Based on some research conducted more than 50 years ago, concerns have been expressed that trace amounts of aluminium, from food and other sources, make their way into the brain, where they cause the damage that leads to Alzheimer's Disease. However, more rigorous research studies that have been carried out since the original work, using improved methods, have not supported this conclusion.

The *United Nations' International Programme on Chemical Safety* has concluded that there is no evidence that aluminium is a primary cause of Alzheimer's Disease and that aluminium does not cause Alzheimer's Disease in humans or other animals.

The US *Alzheimer's Association* similarly notes that most researchers do not believe that normal exposures to aluminium lead to Alzheimer's Disease, and that experts today focus on other areas of research, mostly genetic factors.

ALUMINIUM IN OUR BODIES AND ALZHEIMER'S DISEASE

Because aluminium is a common natural element that is found in soils, water and dust in the air, as well as in plants and animals, we all have trace amounts of the substance in our bodies. However, these low levels are not dangerous to our health. Recent studies have concluded that aluminium, including aluminium in pots and pans, is not associated with Alzheimer's Disease, or with other types of dementia or brain diseases.

Research has concluded, for example, that there are not greater amounts of aluminium in the brains of Alzheimer's patients than those who did not have the disease.

According to reliable studies, the Alzheimer "plaques" that form in the brains of Alzheimer's patients are not caused by aluminium; instead, the plaques cause some metallic elements, including aluminium, to accumulate in the brain.

It has been shown that aluminium is not easily absorbed into the skin, and there is no evidence from reliable scientific studies that the use of these products on the skin, such as cosmetics and antiperspirants, can be associated in any way with Alzheimer's Disease.

The older research that reported a possible relationship between aluminium and Alzheimer's Disease had used exposure types and amounts that are very different from those we get from common products containing small amounts of aluminium.

For example, research carried out in 1965 involved injecting aluminium directly into the brains of rabbits. Other studies used amounts of aluminium that were up to 1,000 times higher than normal exposures from all sources. In addition, the brain changes observed in these experiments are not like those seen in Alzheimer's Disease.

KIDNEY DISEASE PATIENTS AND ALZHEIMER'S DISEASE

It is known that people with certain serious medical conditions are more sensitive to adverse effects from aluminium; these include people on dialysis treatment as a result of severe kidney disease.

The kidneys filter out substances that are not needed by the body, including aluminium, and excrete them. When the kidneys are not working properly these substances build up in the body to levels that are damaging.

Early types of dialysis treatments often resulted in a build-up of aluminium in the brain that led to a specific type of dementia, but this is not the same as Alzheimer's Disease.

Healthy people are not at risk from any of these effects.

ADDITIONAL RESOURCES

ALZHEIMER'S DISEASE RISK FACTORS & MYTHS

Alzheimer's Society:

Risk factors for dementia

www.alzheimers.org.uk/download/downloads/id/1770/factsheet_risk_factors_for_dementia.pdf

Risk factors - understanding the evidence

www.alzheimers.org.uk/info/20010/risk_factors_and_prevention#riskfactors

Alzheimer Society Canada: *Aluminium and dementia: Is there a link?*

www.alzheimer.ca/en/About-dementia/Alzheimer-s-disease/Risk-factors/Aluminum

Alzheimer's Association: *Myths*

www.alz.org/alzheimers_disease_myths_about_alzheimers.asp

WebMD

5 Myths About Alzheimer's Disease

www.webmd.com/alzheimers/features/5-alzheimers-disease-myths?

Controversial Alzheimer's Disease Risk Factors

www.webmd.com/alzheimers/guide/controversial-claims-risk-factors

Mayo Clinic: Alzheimer's disease

www.mayoclinic.org/diseases-conditions/alzheimers-disease/symptoms-causes/syc-20350447

ALZHEIMER'S ASSOCIATIONS

Alzheimer's Association (Australia)

www.alz.org/au/dementia-alzheimers-australia.asp

Alzheimer's Association (UK)

www.alz.org/uk/dementia-alzheimers-uk.asp

Alzheimer's Association (Deutschland)

www.alz.org/de/demenz-alzheimer-deutschland.asp

Alzheimer's Association (France)

www.alz.org/fr/demence-alzheimer-france.asp

Alzheimer Europe

www.alzheimer-europe.org

Alzheimer's Society

www.alzheimers.org.uk

Alzheimer Society Canada

www.alzheimer.ca

BLOGS

Aeon: *Lifestyle changes, not a magic pill, can reverse Alzheimer's*

www.aeon.co/ideas/lifestyle-changes-not-a-magic-pill-can-reverse-alzheimers

The Conversation: *Does aluminium cause Alzheimer's and breast cancer?*

www.theconversation.com/does-aluminium-cause-alzheimers-and-breast-cancer-8799

ABC Science: Aluminium & Alzheimer's

www.abc.net.au/science/articles/2004/07/29/1163941.htm

Medical News Today: What's to know about Alzheimer's disease?

www.medicalnewstoday.com/articles/159442.php

TECHNICAL INFORMATION

International Programme on Chemical Safety (1997). "Environmental Health Criteria 194: Aluminium".

www.inchem.org/documents/ehc/ehc/ehc194.htm#PartNumber:1

European Food Safety Authority (2008). "Safety of aluminium from dietary intake - Scientific Opinion of the Panel on Food Additives, Flavourings, Processing Aids and Food Contact Materials (AFC)"

www.onlinelibrary.wiley.com/doi/10.2903/j.efsa.2008.754/abstract

Lidsky, T. (2014). "Is the Aluminum Hypothesis dead?". *J Occup Environ Med.* 2014 May; 56(5 Suppl): S73-9.

www.ncbi.nlm.nih.gov/pmc/articles/PMC4131942/