



**Libyan International Medical University
Faculty of Basic Medical Science**



**Higher Vitamin D Dietary inTake and it is Associated with Lower Risk of
Alzheimer's Disease.**

submitted by: Mohamed khalil Esaiti , a medical student at the third year , faculty of Basic Medical Science , Libyan International Medical University .

supervisor: Dr: Ghanim.

Date of submission: 3/7/2018.

Abstract:

Alzheimer's disease (AD) can be devastating. Research to date suggests higher blood levels of vitamin D may help prevent AD and recent animal studies indicate high-dose vitamin D supplementation may help treat the disease by reducing the abnormal proteins in the brain that are associated with the disease. As vitamin D is remarkably safe, we believe middle-aged and older adults should keep their vitamin D blood levels in the higher range of normal (70 – 80 ng/ml; (175 – 200 nmol/l). This usually requires 10,000 IU/day (250 mcg) or more, but such doses should be monitored by having a vitamin D blood level determined once or twice a year. If your loved one has AD, and you want to try high-dose vitamin D treatment, such as 20,000 IU/day (500 mcg), it is imperative that frequent vitamin D blood levels be obtained to ensure vitamin D toxicity does not occur.

Introduction:

Alzheimer's disease (AD) is an illness that causes memory problems and other cognitive dysfunctions that may result in unpredictable changes in behavior. Usually, it's progressive, which means it develops slowly and worsens over time. AD is the most common form of dementia. Dementia is the medical word used for loss of cognitive function that is serious enough to interfere with an individual's daily life. Currently, there is no cure for AD.

There are two main changes that take place in the brain when an individual develops AD:

- *Plaques*, which are clusters of protein that build up between the nerve cells in the brain. These stop cells from signaling to each other.
- *Tangles*, which are dead or dying nerve cells. These stop nutrients from moving through the cells, causing them to die.

Some of the main symptoms are:

- Memory loss that affects daily life
- Having trouble planning or solving problems
- Not being able to complete everyday tasks
- Having trouble reading or judging distances
- Having poor judgment when making decisions
- Withdrawing from work, hobbies and social activities
- Getting confused about the time or location
- Changes in mood or personality, such as becoming easily upset, suspicious or anxious.

Causes of Alzheimer's disease:

While there are many factors that increase the chances of developing AD, scientists are still not sure what causes some people to get it. Scientists know that it involves the development of

plaques and tangles and failure of brain cells and, but they don't know why. Additionally, over time, brain cells death causes the brain to shrink, which affects brain function. AD is the result of many different factors, not just one single cause.

You're more likely to develop AD if:

- You're 65 years or older.
- You have an immediate family history of someone having AD.
- You have genes that are involved with the development of AD.
- You have had a serious head injury, especially repeated injuries.
- You have other health conditions, such as high blood pressure, heart disease, diabetes, high cholesterol or if you have had a stroke.
- You are of African or Hispanic descent.

Discussion:

- A study in 11, 1 November 2012 on 498 women (mean, 79.8 ± 3.8 years) free of vitamin D supplements they were divided into three groups according to the onset of dementia within 7 years (no dementia, Alzheimer's disease [AD], or other dementias) Women who developed AD ($n = 70$) had lower baseline vitamin D intakes than nondemented ($n = 361$) or those who developed other dementias ($n = 67$). There was no difference between other dementias and no dementia.¹
- A study conducted in Italy July 12, 2010 A total of 858 adults 65 years or older completed interviews, cognitive assessments, and medical examinations and provided blood samples. Cognitive decline was assessed using the Mini-Mental State Examination (MMSE). From the result it is concluded that Low levels of vitamin D were associated with substantial cognitive decline in the elderly population studied over a 6-year period.²
- Another study in July 2008 analyzed the serum 25-hydroxyvitamin D₃ levels and Mini-Mental State Examination (MMSE) test scores of 225 older outpatients who were diagnosed as having probable Alzheimer's disease (AD). In addition to the 25-hydroxyvitamin D₃ levels, we analyzed the serum vitamin B₁, B₆ and B₁₂ levels. Results: Vitamin-D-sufficient patients had significantly higher MMSE scores as compared to vitamin-D-insufficient ones. No association was found with the other serum vitamin levels.³

Conclusions

Higher blood levels of vitamin D may help prevent AD. And the correction of hypovitaminosis D in older adults is justified from a cognitive perspective in different statistical studies reporting direct associations between decreased 25OHD concentrations and cognitive disorders.

Reference:

1- Annweiler, Rolland, Yves, et al. Higher Vitamin D Dietary Intake Is Associated With Lower Risk of Alzheimer's Disease: A 7-Year Follow-up | *The Journals of Gerontology: Series A* | Oxford Academic. OUP Academic.

<https://academic.oup.com/biomedgerontology/article/67/11/1205/604160>. Published April 13, 2012. Accessed July 1, 2018.

2- Llewellyn DJ. Vitamin D and Risk of Cognitive Decline in Elderly Persons. *Archives of Internal Medicine*. 2010;170(13):1135. doi:10.1001/archinternmed.2010.173.

3- Oudshoorn C, Mattace-Raso F, Velde NVD, Colin E, Cammen TVD. Higher Serum Vitamin D₃ Levels Are Associated with Better Cognitive Test Performance in Patients with Alzheimer's Disease. *Dementia and Geriatric Cognitive Disorders*. 2008;25(6):539-543. doi:10.1159/000134382.