

- Vitamins

Studies on Vitamin D Deficiency

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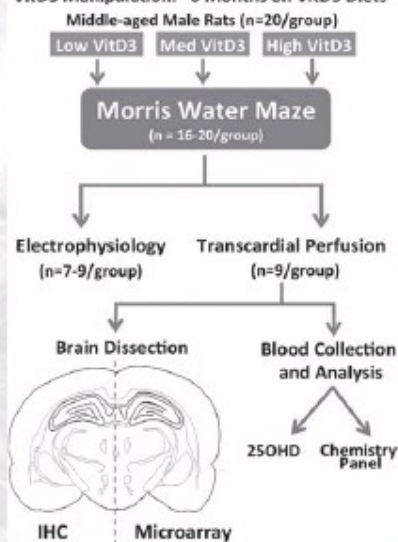
Studies have long shown that vitamins play a crucial role in strengthening bodily functions, from the way Vitamin C boosts the immune system to the way the Vitamin B family helps the body deal with metabolic needs.

Vitamin D is also quite a powerhouse vitamin, with various studies noting that it helps the body absorb and retain calcium and phosphorus, apart from having properties that help control infections and reduce inflammation.

Recent studies, however, have shown that there's more to the vitamin than what's currently known about it, as it has been found that Vitamin D deficiency holds associations with accelerated brain aging and increased risk of mortality.

Here are takes on what these studies have found.

VitD3 Manipulation: ~ 6 Months on VitD3 Diets



An overview of the study design. Middle-aged (11 to 13-month-old) rats were treated with the indicated diets (VitD3, cholecalciferol) for 6 months and evaluated for learning and memory behavior and other outcome measures.

THE STUDIES

A study conducted by researchers affiliated with the University of South Australia got the attention of many in finding an association between Vitamin D deficiency and premature death.

Published in the *Annals of Internal Medicine* journal and titled "Vitamin D Deficiency Increases Mortality Risk in the UK Biobank", it worked with data/records from the UK Biobank, and was done with a Mendelian randomization method that analyzed the records of more than three hundred thousand individuals from a period that spans for around fourteen years.

The study's proponents found evidence that low

levels of Vitamin D is associated with premature death, and notes that the study is the first of its kind to include respiratory disease related to mortality to its scope.

They worked with a "new genetic method" to explore and affirm the non-linear relationships that've been observed in observational settings/ studies. Through the method, the study's proponents were able to ascertain evidence of the connection between low levels of the vitamin and premature death.

Another study found that Vitamin D deficiency is associated with accelerated brain aging.

Published in the *Psychiatry Research: Neuroimaging* journal and titled "Vitamin D deficit is associated with accelerated brain aging in the general population", it looked into the records of 1,865 subjects.

The study did not only ascertain that Vitamin D deficiency is linked to accelerated brain ageing, but also that Vitamin D levels also holds associations with total brain and gray matter volumes.

In conducting the study, its proponents were well aware of Vitamin D's associations with reduced neurocognitive functioning and the neurodegenerative process, and sought to investigate that association by analyzing structural MRI image scans that pertain to brain aging.

Their findings support previous studies indicating that Vitamin D deficient individuals are at risk of accelerated brain aging, and hypothesize that the vitamin may offer neuroprotective benefits.

Both studies note that more research is necessary to better understand the associations that they found between Vitamin D deficiency, premature death and brain aging.



American biochemist Elmer McCollum is best known for his work on the influence of diet on health, discovery of Vitamin A, Vitamin B and Vitamin D. At one point, he was named "Dr. Vitamin" by Time magazine.

ON VITAMIN D

Vitamin D was first discovered in 1922, and its discovery was built on previously conducted studies and research.

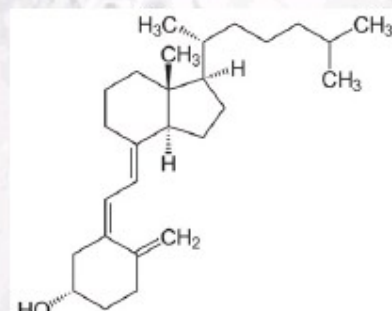
In 1914, American researchers Marguerite Davis and Elmer McCollum discovered a substance found in cod liver oil that was later known as Vitamin A.

Some eight years after in 1922, McCollum tested a modified formulation of cod liver oil that did not contain Vitamin A, and this was found to have improved the condition of dogs that were sick with rickets.

From that formulation, McCollum found a vitamin that's distinct from Vitamin A, and called it Vitamin D as it was the fourth vitamin to be named then.

Vitamin D helps in maintaining healthy teeth and bones. Pre-noon sunlight, eggs and fatty fish are cited as rich sources of Vitamin D.

Vitamin D deficiency is widely considered to be one of the most common types of vitamin deficiencies, and common warning signs of the deficiency include fatigue, bone pain, muscle pains and cramps. Mood changes are also tied with Vitamin D deficiency.



Structural Formula of Vitamin D. Vitamin D helps the body absorb calcium, which is one of the main components that strengthen bones. Generally, you can get the vitamin in three ways, either through your skin from sunlight, from your diet or from supplements. The body forms Vitamin D naturally after exposure to sunlight – particularly pre-noon sunlight. Because of its role in helping the body absorb calcium, most Vitamin D deficiencies are related to bone-related disorders.

Recent studies, however, have shown that there's more to the vitamin than what's currently known about it, as it has been found that Vitamin D deficiency holds associations with accelerated brain aging and increased risk of mortality.

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