

A new study of 1,658 adults has shown that insufficient serum vitamin D levels are significantly associated with an increased risk of all-cause dementia and Alzheimer's disease.

## Low Vitamin D levels are associated with increased dementia risk

Vitamin D deficiency has recently been linked to many non-skeletal conditions, including mental and cognitive health. In a new study published in the journal *Neurology*, researchers sought to determine whether insufficient vitamin D blood levels were associated with an elevated risk of all-cause dementia and Alzheimer's disease.

The study included 1,658 normally healthy adults who participated in the US population-based Cardiovascular Health Study. Participants were free from dementia, cardiovascular disease and stroke at the beginning of this study. Previously collected serum vitamin D samples were analyzed and dementia and Alzheimer's status were assessed during follow-up using criteria by the National Institute of Neurological and Communicative Disorders and Stroke/Alzheimer's Disease and Related Disorders Association.

Over an average of 5.6 years of follow-up, 171 adults developed all-cause dementia, including 102 cases of Alzheimer's disease specifically. Compared to subjects with vitamin D blood levels at or above 50 nmol/L (20 ng/ml), participants who were severely vitamin D deficient (25 nmol/L, or 10 ng/ml) were more than twice as likely to develop all-cause dementia. Subjects with vitamin D levels considered deficient (25 to 50 nmol/L) were 53% more likely to develop all-cause dementia than the group with sufficient levels. Compared to those with sufficient vitamin D levels, subjects that were severely deficient and deficient were 122% and 69% more likely to develop Alzheimer's disease, respectively.

The results add support to the idea that vitamin D plays important roles in non-skeletal conditions, and confirms that vitamin D deficiency (below 50 nmol/L or 20 ng/ml) is associated with a substantially elevated risk of all-cause dementia and Alzheimer's disease.

Thomas J. Littlejohns et al. Vitamin D and the risk of dementia and Alzheimer disease. *Neurology* 2014;83:1–9.