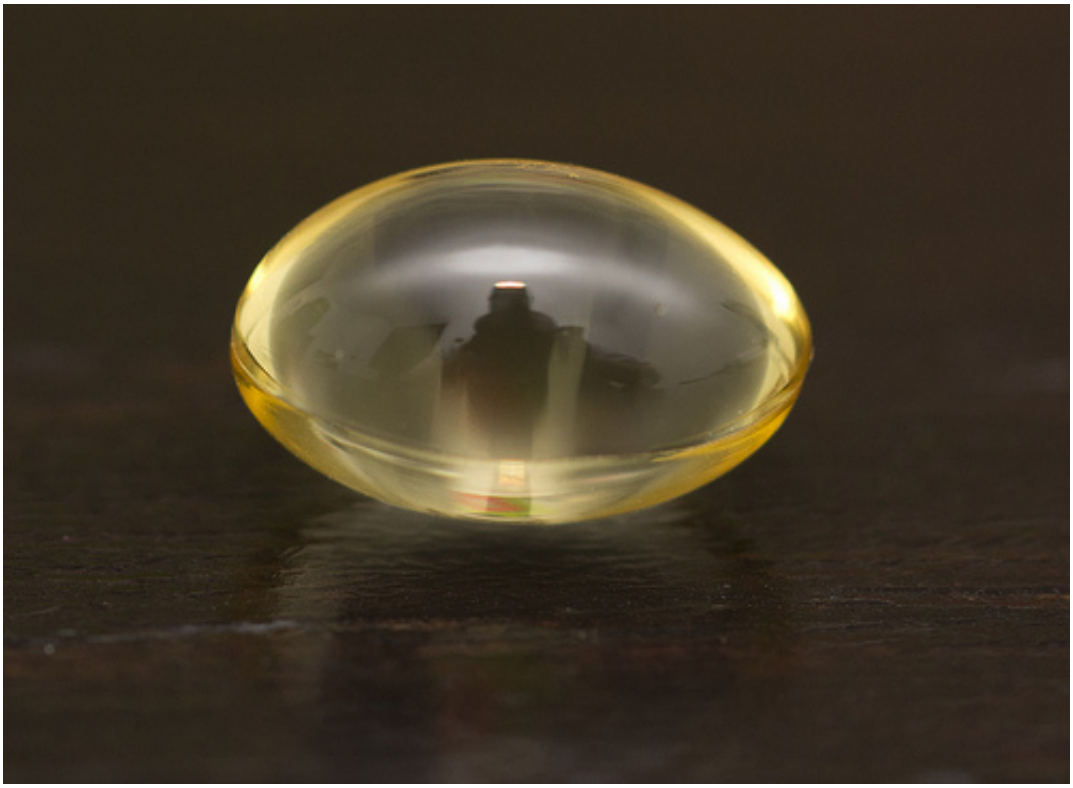
One in ten people over forty years old in Britain is vitamin D deficient

September 26 2014



Vitamin D. Credit: Collin Grady via flickr

As many as one in ten people in Britain over forty years old may be vitamin D deficient, according to a study carried out by researchers at the University of Cambridge.

Vitamin D is nicknamed the 'sunshine vitamin' as it is produced in the

skin in response to sunlight. It is also found in some foods, such as oily fish (including salmon and mackerel) and eggs. Low levels of the vitamin have been associated with increased risk of conditions as wide-ranging as rickets, bone fractures, diabetes, respiratory diseases and cancers. People living in northern Europe, where sunlight is often insufficient to manufacture adequate vitamin D, have to rely on body stores of vitamin D produced over the summer months.

In a study funded by the Medical Research Council and Cancer Research UK, Cambridge researchers looked at levels of vitamin D in blood samples taken from around 15,000 participants from the European Prospective Investigation into Cancer (EPIC) in Norfolk Study in order to identify optimal levels of the vitamin for health.

"We know that vitamin D deficiency can be detrimental to health, but until now there has been no clear answer as to what is actually the ideal amount of the vitamin," explains Professor Nick Wareham, Director of the Medical Research Council Epidemiology Unit at the University of Cambridge. "Outside of those whose levels are extremely low, we've had no way of knowing how many people are actually getting less vitamin D than they need."

Trials involving vitamin D supplements have so far proved inconclusive, possibly because the method in which the vitamin D is administered (orally or intramuscularly), the type of vitamin D (D3 or D2) and frequency and amount have differed between trials, and hence blood levels and biological effects vary hugely.

The Cambridge team measured the amount of 25-hydroxyvitamin D in the blood, which is an indicator of individual vitamin D status. Previous studies have suggested that individuals with less than 30 nanomoles per litre (nmol/l) of the molecule are at risk of rickets and other bone diseases, but that too much vitamin D – over 125 nmol/l – could

potentially be detrimental to one's health.

By comparing blood levels of 25-hydroxyvitamin D with health of individuals over the next 13 years the researchers found that between 30 and 120 nmol/l, the higher the amount of the molecule in an individual's blood, the lower their risk of heart disease, respiratory diseases and bone fractures. In fact, for every additional 20 nmol/l, an individual had an 8% smaller chance of dying during the 13 year follow up. Only one per cent of the participants had levels above 120 nmol/l, so it was not possible to say what effect higher levels of vitamin D had on an individual's health.

The researchers suggest that the optimum level of 25-hydroxyvitamin D in the blood is somewhere between 50-90 nmol/l. Over four in ten of the 15,000 individuals studied fell below this level.

"Our data suggest that a modest increase in vitamin D in the general population may minimise the number of people with very low levels of the vitamin and may have some benefits even for those whose levels are acceptable," adds Professor Kay-Tee Khaw from the Department of Public Health and Primary Care, University of Cambridge.

"This could be achieved by taking modest daily vitamin D supplements—around 800IU daily—or eating oily fish two or three times a week and increasing physical activity as we are more efficient at producing vitamin D if we are physically active. We only need around 20 minutes a day of sunlight in summer to ensure that we have sufficient levels to see us through the winter and must be careful as we know that over-exposure to sunlight – particularly if we burn – raises skin cancer risk."

More information: The complete study is available online: ajcn.nutrition.org/content/ear … 086413.full.pdf+html

Provided by University of Cambridge