Milk and water most efficient vehicles for absorbing vitamin D, study finds

May 23 2022

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According to a new study that was presented May 21 at the 24th European Congress of Endocrinology in Milan, Italy, vitamin D food fortification worked better with water and milk than in juice. By measuring the maximum concentration over time, the researchers found bioavailability of vitamin D to be higher in milk and water.

Vitamin D insufficiency is a global health problem. It has been linked with multiple health issues, including the immune response to COVID-19. Estimates show that as much as 40% of the European population could be suffering from vitamin D deficiencies, with 13% potentially suffering from severe vitamin D deficiency. Vitamin D supplements are therefore vital, and knowing whether they will be absorbed and how best to aid absorption is crucial.

To answer this question, Dr. Rasmus Espersen of Aarhus University in Denmark and his colleagues conducted a randomized trial on 30 postmenopausal women aged 60–80 with vitamin D deficiency. The study aimed to measure immediate changes in blood concentrations in response to the consumption of various food items containing 200 g D3. In a random order, 500 mL of water, milk, juice, juice with vitamin D bound to whey protein isolate as well as 500 mL of water without vitamin D (placebo) were presented to the study participants. Blood samples were collected at 0h, 2h, 4h, 6h, 8h, 10h, 12h, and 24h on each study day.

"One aspect that surprised me was the fact that the results seen in the water and milk groups were equal. This was quite unexpected given the fact that milk contains more fat than water," stated Dr. Espersen.

The study revealed that whey protein isolate in apple juice did not enhance maximum concentration of D3 compared to juice without WPI. However, compared to juice, D3 concentrations were significantly higher in response to intake of milk and water. No difference was

observed between milk and water. Therefore, the conclusion from this study is that vitamin D fortification works better in water or milk than in juice.

More information: 24th European Congress of Endocrinology

Provided by European Society of Endocrinology