Vitamin D supplements could help reduce falls in homebound elderly

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Every year falls affect approximately one in three older adults living at home, with approximately one in 10 falls resulting in serious injury. Even if an injury does not occur, the fear of falling can lead to reduced activity and a loss of independence.

Research has shown that vitamin D plays a key role in maintaining muscle integrity and strength and some studies suggest vitamin D may reduce the risk of falls.

Homebound elderly, a generally vulnerable population due to poor dietary intake and nutrition-related health conditions as well as decreased exposure to sunlight, are at increased risk for low vitamin D levels, possibly leading to more falls.

Researchers at Wake Forest Baptist Medical Center set out to evaluate

the feasibility of delivering a vitamin D supplement through a Meals-on-Wheels (MOW) program to improve the clients' vitamin D levels and reduce falls.

The study is published in the early online edition (8/16/2015) of the *Journal of the American Geriatrics Society*.

"Falls in homebound older people often lead to disability and placement in a nursing home," said Denise Houston, Ph.D., R.D., associate professor of gerontology and geriatric medicine at Wake Forest Baptist and lead author of the study. "One or our aging center's goals is to help people maintain their independence and live safely at home for as long as possible."

Participants in the Meals-on-Wheels program in Forsyth County, North Carolina, were recruited to take part in a five-month, single-blind randomized trial.

Sixty-eight study participants received either a monthly vitamin D supplement of 100,000 international units or placebo delivered with their MOW meal. The study included the participants' history of falls and their fear of falling, blood tests at the beginning and at end of the trial to measure 25-hydroxyvitamin D (biomarker for vitamin D in blood), and a monthly diary recording falls during the trial period.

At the beginning of this pilot study, the research team found that more than half of the participants had insufficient concentrations of vitamin D in the blood (less than 20 ng/ml), while less than a quarter had concentrations in the optimal range (30 ng/ml or more).

The study showed that the monthly vitamin D supplement was effective in increasing the concentrations of vitamin D in the blood from insufficient to sufficient levels in all but one of the 34 people who

received it, and to optimal levels in all but five people. In addition, people in the vitamin D group reported approximately half the falls of those in the control group.

"Although these initial findings are encouraging, we need to confirm the results in a larger trial," Houston said.

The Wake Forest Baptist team currently is conducting a clinical trial to try to determine how vitamin D affects risk factors for falls such as balance and muscle strength and power.

Provided by Wake Forest University Baptist Medical Center