



Q&A

Questions and Answers about the Women's Health Initiative (WHI) Studies on Calcium plus Vitamin D Supplementation

Q. What is the Woman's Health Initiative?

A. The Women's Health Initiative (WHI) is a long-term national health study that focuses on reducing the risk of heart disease, breast and colorectal cancers and fractures in postmenopausal women. The study is a randomized, double-blind placebo controlled trial involving a large group—36,282—of postmenopausal women. Of the several study arms of the large trial, two focused on the effect of calcium and vitamin D supplementation on the risk of hip fractures and colorectal cancer in postmenopausal women. The results of the two study arms were published in the February 16, 2006 issue of the *New England Journal of Medicine*.

Q. What did the calcium and vitamin D studies find?

A. The studies showed results that were somewhat unexpected, specifically, in that the combination of calcium and vitamin D supplementation did not significantly reduce the risk of hip fracture among all study participants, nor did it reduce the risk of colorectal cancer, in postmenopausal women. However, when study dropouts were not considered, there was a significant reduction in risk of hip fracture in those who actually took the calcium and vitamin D supplement.

Q. Did the studies find any benefit?

A. Yes. The study on hip fractures showed that calcium with vitamin D supplementation resulted in a modest but significant improvement in hip bone density in postmenopausal women. It's very possible that if the study had continued for a longer period of time there would have been a significant reduction in fracture risk. And it is noteworthy that when the dropouts were not included, there was a significant protection against hip fracture by calcium and vitamin D among those who actually took the supplements as directed.

Q. Were there any safety issues?

A. The WHI studies found no major safety concerns for calcium and vitamin D supplementation. Although the conclusion (in the risk fracture trial) found the supplements increased the risk of kidney stones, it appears that the increase was only marginally statistically significant. The incidence of kidney stones was 29 per 10,000 women for placebo vs. 34 per 10,000 women for calcium and vitamin D. This result had not been seen in other studies of calcium and vitamin D, and it could be a chance occurrence.

Q. Was the study flawed?

- A.** Not so much flawed, but rather there were some limitations which may have led to the unexpected results. For example, in the hip fracture trial, the study authors noted that the 400 IU of vitamin D per day used in the study was substantially lower than doses shown in other studies to have positive effects on hip fracture. In addition, the study notes that subjects may have been too young to detect a beneficial effect on hip fracture. It was also pointed out that the women studied already had more than adequate calcium intakes (>1000 mg/d), therefore there may have not been much room for improvement. In the study on colon cancer, the authors noted that the latency period of 10 to 20 years for colorectal cancer could have played a role in the null results, given that the study duration averaged only seven years.

Q. Given the results of this important study, what should consumers do?

- A.** If you're already taking calcium and/or vitamin D, there is no need to change your habits based on these studies. If you haven't started yet, you should still consider it. In fact, these supplements may play a role in maintaining health that goes beyond your bones and colon. There are some studies that suggest calcium intake may be important for maintaining a healthy weight, and that vitamin D may help support the immune system. In conclusion, these two studies, when viewed in context with all the other research, do not change the advice offered by the scientific and medical community that those taking these supplements should still consider it a smart choice. Those who have not yet started taking calcium and vitamin D should still consider it and discuss that option with a healthcare professional.

Q. Should I get these nutrients from food or supplements?

- A.** Both. Calcium can be obtained in a variety of foods, all of which also provide many other beneficial nutrients. Dairy foods serve as an excellent source of calcium, and greens, such as broccoli also can serve as a source. Those who tend to avoid dairy products due to allergies, lactose intolerance or vegetarians should consider using a calcium supplement of some kind. Most adults should aim for about 1000 mg calcium per day in their diet. Vitamin D is a different story. It tends to be found in relatively small amounts in the human diet, primarily in fatty fish (salmon, sardines) and fortified milk. Nature did not intend for us to get our vitamin D in food but rather through sun exposure. For those living in the northern latitudes during the winter, getting enough vitamin D from the sun can be a problem. If you're a vegetarian or don't eat fish or drink milk, it's that much more of a problem. Consumption of vitamin D through supplements or fortified foods (of which there are only a few), is the best way to ensure you're getting enough. Most adults should aim for between 400 and 800 IU vitamin D per day.