TWISTING THE RECORD ON VITAMIN D

Ralph Moss PhD

A team of researchers led by National Cancer Institute (NCI) epidemiologist Dr. Michal Freedman has published an article suggesting that vitamin D is highly successful in reducing deaths from cancers of the colon and rectum. The researchers studied 16,818 people who had joined a nationwide U.S. government health survey between 1988 and 1994. The volunteers were then followed through the year 2000, by which time 536 had died of cancer. The study found that people with relatively high blood levels of vitamin D when they entered the study had a 72 percent reduction in their risk of dying of colorectal cancer compared to those with lower levels of vitamin D.

The article was published in the *Journal of the National Cancer Institute* in early November 2007 (although news of it broke a week earlier). The researchers were quoted as saying that the findings in colorectal cancer were consistent with other studies of vitamin D. On the other hand, the study did not establish a more generalized link between high levels of vitamin D and a reduction in the overall risk of dying from various cancers, including those of the lung, prostate, and breast.

There are important questions about the methodology used in this study, issues that may have limited the researchers' ability to detect some of the positive effects of vitamin D. But even if the methodology and conclusions of the Freedman study were correct, it is not so much the results that are disappointing, but the spin that the mainstream media put on the findings. The reaction of the media to the study revealed in a stark way their deeply ingrained prejudice against nutritional solutions to cancer.

The Reuters news agency *did* report the study correctly and with a properly nuanced understanding of its positive and negative aspects. The headline of the Reuters report read: "Vitamin D Cuts Colon Cancer Death Risk." The article, by writer Will Dunham, began: "People with higher vitamin D levels are less likely to die of colorectal cancer, researchers said on Tuesday, but the vitamin does not appear to affect the chances of dying from any other type of cancer" (Oct 31, 2007). This is a fair summary of the paper's conclusions. One other source, the Canadian Broadcasting Corp., or CDC, also got it right: "Vitamin D Cuts Colorectal Cancer Risk."

But most news outlets that I saw emphasized the negative aspect of the findings, that vitamin D, as one put it, was no "magic bullet" for cancer (as if anyone said it was). Here are some of the headlines of stories that were published hours after the news of the study first broke:

- "Vitamin D May Not Reduce Cancer Deaths" (*AP*)
- "Vitamin D May Not Lower Risk of Cancer Deaths" (*Fox*)
- "Vitamin D Is Not Magic Bullet for Cancer" (*Wired News*)
- "Vitamin D Won't Help Prevent Most Cancers" (*HealthDay*)
- "Vitamin D Doesn't Prevent Cancer Deaths" (*Windsor Star*)
- "Vitamin D Benefit At Issue" (*Ft. Worth Star*)
- "No Connection Found Between Vitamin D and Overall Cancer Deaths" (*Medical News Today*)
- "Vitamin D Doesn't Reduce Cancer Risk" (**Nutraingredients.com**)
- "Vitamin D Does Not Reduce Overall Cancer Mortality" (*ANI India News*)
- "Vitamin D Has No Effect on Overall Cancer Death Rate" (*Medical News Today*, 2nd article)
- "Study Raises Questions About Vitamin D and Cancer" (*KWWL Iowa*)
- "Vitamin D Downgrade As Scientists Advise There is No Real Proof It Fights Cancer" (*Daily Mail*)

According to the study, "Colorectal cancer mortality was inversely related to serum 25(OH)D level." (Serum 25(OH)D is a standard biochemical marker that is used to determine blood levels of vitamin D.) Participants in the study who had 25(OH)D levels of 80 nmol/L or higher had a 72 percent risk reduction in colorectal cancer compared to people who had levels lower than 50 nmol/L (Freedman 2007).

A Thought Experiment

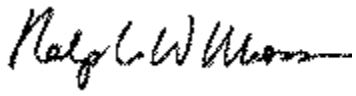
So let us now imagine that everyone who had vitamin D levels of 50 nmol/L could be brought up to the level of 80 nmol/L. This could be accomplished through the judicious use of vitamin D supplements. Another way would be through increased sunlight exposure, although that is controversial since it might also raise the risk of some skin cancers.

The American Cancer Society anticipates that in 2007 a total of 52,180 Americans will die of colorectal cancer, representing approximately 10 percent of all cancer deaths (*Cancer Facts and Figures* 2007). If you prevented 72 percent of these deaths you would save 37,570 lives each year. To comprehend this graphically, the seating capacity of Fenway Park in Boston is 38,805. Thus, you could nearly fill this stadium to capacity with the people whose deaths from colorectal cancer could be avoided each and every year. Worldwide, the United Nations estimates that there are 500,000 deaths from colorectal cancer each year (*W.H.O. World Cancer Report* 2003). A 72 percent reduction would mean

360,000 lives saved each year. That's a lot of lives saved and a lot of misery avoided!

There is some disagreement over how much vitamin D is necessary in order to raise the blood level to 80 nmol/L. As a general rule, the government advocates the intake of 400 IU vitamin D per day. But some Canadian experts feel that a minimum of 800 IU/day to 1000 IU/day may be needed, with up to 2000 IU/day to 4000 IU/day in special circumstances (Canadian Pediatric Society 2007).

One hundred tablets of 800 IU of vitamin D can be purchased on the Internet for under $2.00 ($1.94). Thus, most people could supply themselves with sufficient amounts of supplemental vitamin D for 2¢ per day, or around $7.50 per year. By comparison, Leonard Saltz, M.D., an expert on colon cancer treatment at Memorial Sloan-Kettering Cancer Center, N.Y., has estimated that the cost of chemotherapy for advanced colon cancer is approximately $250,000. Thus the cost of treating just one case of colon cancer would be enough to prevent death from colon cancer in over 30,000 cases. This is a perspective that somehow failed to come across in the vast majority of recent media stories about vitamin D and cancer.



--Ralph W. Moss, Ph.D.

References:

Canadian Pediatric Society: Vitamin D supplementation: Recommendations for Canadian mothers and infants. Accessed at:
http://www.cps.ca/english/statements/II/FNIM07-01.htm

Cost of cancer treatment:
http://www.usatoday.com/news/health/2006-07-10-cancer-costs_x.htm

Freedman DM, Looker AC, Chang SC, et al. Prospective study of serum vitamin D and cancer mortality in the United States. *J Natl Cancer Inst* 2007 Nov 7;99(21):1594-602.

W.H.O. World Cancer Report:
http://www.who.int/mediacentre/news/releases/2003/pr27/en/