

Season Affects Cancer-Surgery Survival

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First of a three-part series on the sunshine vitamin

People likely to have had high concentrations of vitamin D in their bodies had a far better chance of being alive and cancerfree 5 years after surgery for early-stage lung cancer than did people who probably carried little of the vitamin when they underwent surgery. The finding emerges from a study reported this week at a major cancer conference.

The research was a bit of a fishing expedition. The sunshine vitamin has been linked to several anticancer effects, such as inhibiting the proliferation of tumor cells and limiting the growth of new blood vessels that feed expanding tumors. This time, scientists at the Harvard School of Public Health wanted to investigate whether vitamin D might affect the success of a standard treatment for an especially aggressive and lethal malignancy.

They chose lung cancer. "It's a horrendous disease," notes epidemiologist David C. Christiani. "The only patients with decent survival are [treated while] still in the early stages," he says. Overall, a mere 15 percent of people diagnosed with this disease survive 5 years.

About half of people operated on early in their disease survive without cancer for another 5 years or more. At the American Association for Cancer Research meeting, in Anaheim, Calif., this week, Christiani reported even better survival odds for patients presumed to have plenty of vitamin D because they ate D-rich foods and had their surgeries during a sunny month. If the effect of D on lung cancer survival is confirmed by future studies, then all people with the cancer should start taking vitamin D supplements immediately upon diagnosis, Christiani told *Science News Online*.

'Pretty strong effect'

From 1992 to 2000, the researchers recruited 459 patients from throughout the Boston area with early-stage disease. All received surgery promptly after diagnosis and were followed ever since or until they died. The mean follow-up in the study was 71 months, "a very long time," Christiani notes. At the time of surgery, each participant was asked to complete a questionnaire on his or her diet, including any supplement use.

Patients who had surgery in sunny months—May to August—had a roughly 30 percent higher overall survival rate or time to cancer recurrence than did those getting surgery in the winter. Survival after surgery at other times during spring and fall fell somewhere in between. In other words, Christiani notes, "season had a pretty strong effect."

The researchers propose that, owing to their probable exposure to solar ultraviolet (UV) light just before and after surgery, the cancer victims operated on during summer would have had far more naturally produced vitamin D circulating throughout their bodies than would people undergoing surgery during winter.

Indeed, observes Reinhold Veith of the University of Toronto, "from Boston to Omaha northward, from late October through late March, there's not enough

UV in sunlight to provide us with sufficient vitamin D," no matter how long people remain outside and how much of their skin they leave uncovered. He explains that at low angles in the winter sky, the sun's light has to pass through more UV-filtering atmosphere than in summer.

When Christiani's team combined both indicators of the vitamin's presence in people—diet and season—"we found an especially strong effect." Five-year, cancerfree survival was 72 percent for people who had their surgery done in a sunny season and ate foods and supplements delivering at least 600 international units of vitamin D a day. In contrast, patients whose surgery was performed in winter months and who consumed little vitamin D had only a 29 percent chance of surviving 5 years without recurrence of cancer.

The Boston researchers conclude: "[V]itamin D levels at the time of treatment may be an important predictor for lung cancer survival."

What's happening?

Christiani says he and his colleagues presume that the vitamin dampened the growth and aggressiveness of the cancer, making it less likely to spread and more likely to succumb to any post-surgery chemotherapy or radiation.

If this proves true, cancer patients would benefit from ample vitamin D in their bodies not only at the time of surgery but throughout their recovery and years of follow-up. Christiani would like to see an experiment that compares the survival of patients administered large doses of the vitamin during treatment and follow-up periods against the outcomes of people who rely on diet and conventional therapy alone.

For now, the Harvard researchers will attempt to get more-accurate measures of actual vitamin D concentrations in the patients reported on this week. Hospitals collected and stored blood samples from each patient at the time of surgery. "We're now going to measure vitamin D levels in serum" from those archived samples, Christiani says, to further test the nutrient's cancer-fighting effect.

Over the past decade, a mountain of research has pointed to a broad range of benefits from vitamin D—ones that extend well beyond improving bone health (SN: 10/9/04, p. 232). The findings reported this week add to the case for vitamin D and suggest yet another danger from the epidemic deficiency of the vitamin throughout industrialized countries.

Next week: [Understanding Vitamin D Deficiency](#)

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Further Readings:

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Sources:

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