

# Low Vitamin D Tied to Bone Loss in Breast Cancer

BY JANE SALODOF MACNEIL  
Southwest Bureau

ATLANTA — Vitamin D supplementation should be considered for postmenopausal breast cancer patients treated with aromatase inhibitors, Dr. Per E. Lønning reported at the annual meeting of the American Society of Clinical Oncology.

"Low vitamin D status could be one of the factors predisposing patients to breast cancer," said Dr. Lønning, a professor at Haukeland University in Bergen, Norway.

Postmenopausal breast cancer patients who were treated with exemestane and had vitamin D deficiency lost bone mineral density (BMD) at a higher rate than all other patients in a Norwegian trial, according to Dr. Lønning, who presented the trial's results.

The double-blind study enrolled early breast cancer patients at six sites between January 1999 and October 2001. Participants were postmenopausal with estrogen receptor-negative or progesterone receptor-positive breast cancer. Median patient age was 59.5 years, and all had a low risk of breast cancer recurrence after surgery.

Of the patients enrolled in the randomized, controlled trial, 128 of 147 (87%) had low levels of vitamin D, defined as 30 ng/mL or less.

Investigators randomized 73 women to 25 mg of oral exemestane daily and 74 women to a daily placebo for



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2 years. Local guidelines did not routinely offer adjuvant endocrine therapy at the time of the study, the investigators noted. Mean vitamin D levels were reported as 21.6 ng/mL for the exemestane arm and 22.6 ng/mL for the control group.

Average patient change in femoral neck BMD was -4.7% after 2 years of treatment with exemestane, an aromatase inhibitor. Placebo patients with low vitamin D also had bone loss in the femoral neck, but the reduction was 3.0%.

Women with normal vitamin D levels had similar outcomes whether they were treated with exemestane or placebo: reductions of 3.7% and 3.3%, respectively.

"It has not fully been examined that breast cancer patients on average have a poorer vitamin D status in comparison to the normal population," he added.

An annual BMD loss of 0.5% is normal for postmenopausal women, according to Dr. Lønning and his fellow investigators from the Norwegian Breast Cancer Screening Program. Interviewed during the poster session where he presented trial data, he said low vitamin D levels could be expected in about 50% of postmenopausal women in Norway.

However, he warned against assuming that low vitamin D levels are entirely explained by reduced sun exposure in northern latitudes, because people in other climates are spending more time indoors and out of the sun.

While the investigators reported some significant differences in subgroups and "a trend toward higher loss of BMD in the femoral neck" among women with low vitamin D during the 2 years of exemestane treatment, low vitamin D did not appear to affect lumbar spine BMD as much. The reductions were 3.4% for 52 women deficient in vitamin D who completed the study on exemestane and 2.5% for 59 women who stayed on placebo.

"Vitamin D has influence on compact bone, not trabecular bone," Dr. Lønning said. ■

## Yoga Boosts Quality of Life During Breast Ca Radiation

BY SHARON WORCESTER  
Southeast Bureau

ATLANTA — Participation in a yoga program during breast cancer treatment is feasible and may improve quality of life, Lorenzo Cohen, Ph.D., reported at the annual meeting of the American Society of Clinical Oncology.

The study, designed mainly to examine the feasibility of integrating yoga into the treatment plan for women with breast cancer who are undergoing radiation treatment, involved a total of 62 women with stages 0-III disease. Patients were randomized to a group that participated in yoga twice weekly during treatment or to a "wait-list control group" that was scheduled to participate in a postradiation yoga program.

Not only was recruitment simple and patient interest and satisfaction with the program high, but also after just 1 week of yoga, patients in the intervention group reported significantly improved physical function (mean adjusted short form-36 health status survey scores of 81.8 vs. 68.6) and general health (mean adjusted SF-36 scores of 78.3 vs. 67.9), and significantly less sleep-related daytime dysfunction (Pittsburgh Sleep Quality Index scores of 0.5 vs. 1.2), compared with the control group, Dr. Cohen said.

The yoga group also had marginally better SF-36 scores for social functioning and fatigue at 1 week. However, no

differences in anxiety or depression scores were noted between the groups, Dr. Cohen, director of the Integrative Medicine Program at the University of Texas M.D. Anderson Cancer Center in Houston reported at a press briefing.

The yoga program was designed specifically for this patient population. It emphasized breathing, deep relaxation, and meditation techniques. Patients in



Women randomized to a twice-weekly yoga class reported better physical function after 1 week.

the yoga group participated in a 60-minute yoga session twice weekly just before or after radiation treatment for 6 weeks; patients in the control group were asked to refrain from practicing yoga until after treatment was complete.

"We show that it was clearly feasible to do this type of research ... and that there is some initial indication of efficacy," Dr. Cohen said. Further analysis, including analysis of 1-month and 3-month patient self-report data and of immune function and cortisol levels (from blood tests and saliva samples, respectively) is planned. ■

## Physical Activity Reduces Cancer Risk in Postmenopausal Women

BY MELINDA TANZOLA  
Contributing Writer

ATLANTA — In postmenopausal women, an active lifestyle provided about a 10% reduction in the risk of developing breast cancer over a 17-year period in over 36,000 women, according to findings from a prospective cohort study presented at the annual meeting of the American Society of Clinical Oncology.

The protective effect of physical activity was most significant against the risk of developing the more aggressive estrogen receptor (ER)-positive, progesterone receptor (PR)-negative form of breast cancer, providing a 34% risk reduction, said Dr. Aditya Bardia, who was pursuing a degree at the University of Iowa, Iowa City, at the time of the study.

Dr. Bardia and colleagues from the Iowa Women's Health Study mailed questionnaires addressing leisure time physical activity and breast cancer risk factors to postmenopausal women living in Iowa in 1986; 41,837 women (43%) responded.

The participants' levels of physical activity were classified as low, medium, or high based on the frequency and intensity of their exercise.

The investigators determined cancer incidence between 1986 and 2003 using the Iowa Surveillance, Epidemiology, and End Results (SEER) Cancer Registry and mortality information from state and national resources. Periodic follow-up surveys confirmed continued residence in Iowa in greater than 99% of the women each year.

After excluding women with cancer, a full or partial mastectomy, and those with incomplete data, the cohort included 36,363 women. During the 17-year follow-

up period, 2,548 women were diagnosed with breast cancer at an average age of 71 years.

Overall, 47% of women reported low physical activity, 28% reported medium physical activity, and 25% were highly active. In addition to having a lower body mass index (BMI), active women were more likely to have received education beyond high school and reached menopause at an older age.

A high level of physical activity was associated with a 13% reduction in the risk of developing ER-positive breast cancer and an 8% reduction in ER-negative breast cancer, compared with low physical activity. The risk reduction for PR-positive and PR-negative breast cancer was 5% and 27%, respectively. After the 34% risk reduction for ER-positive/PR-negative breast cancer, the next greatest benefit was a 20% risk reduction in developing ER-negative/PR-negative cancer.

Previous prospective studies have yielded mixed results on the correlation between physical activity and breast cancer risk. Furthermore, such prospective cohort studies have until now evaluated only the link between physical activity and breast cancer risk as a whole. Associations between physical activity and certain types of breast cancer would not have been detected. ■

### Classification of Physical Activity

Level	Intensity	Frequency
High	Vigorous	≥2 times per week
	Moderate	>4 times per week
Medium	Vigorous	1 time per week
	Moderate	1-4 times per week
Low	Any	<1 time per week

Source: Dr. Bardia