

Positive Effects of Physical Activity on Breast Cancer

Educational Forum and Conversation

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Including physical activity consistently in one's daily schedule reduces the risk of breast cancer, as well as symptoms and recurrence in women who have the disease, said Leslie Bernstein, PhD, Professor of Preventative Medicine at the University of Southern California, Keck School of Medicine.

Bernstein and Joan Bloom PhD, Professor of Health Policy & Management, University of California, Berkeley, addressed Zero Breast Cancer's annual educational forum on Thursday, Jan. 18, in San Rafael, Ca. The forum was made possible by a grant from the Andrea Fox Fund, established by the Marin County Board of Supervisors and administered through the Marin County Department of Health and Human Services. The audience of was comprised of breast cancer survivors, individuals working in the field and interested others.

Bernstein, who is the AFLAC Chair of Cancer Research at USC's Norris Comprehensive Cancer Center, cited results of research studies dating back to the mid-1980s in her report. Today, she said, "The epidemiology community – that is people who study breast cancer in populations – believe exercise reduces the risk."

In one of the earlier studies begun in 1988, Bernstein said, researchers looked at a multi-ethnic cohort of 767 schoolgirls between the ages of 8 to 12 for four years, or until menarche. They found that menstruation was delayed when the girls engaged in consistent physical activity. It may have been just a few months, she noted, but that is significant because the delay could have an impact on the cumulative exposure to hormones, thought to be predictive of breast cancer occurrence.

In another study taking place from 1983 to 1988, researchers followed 744 pairs of women, 40-years old or younger, for 10 years. The results showed that those women exercising three hours a week had a 30 percent lower risk of getting breast cancer than those who did nothing. For those exercising four hours a week, the risk was 58 percent lower.

Though only white women were included in the research group, Bernstein said, "This was the first definitive study to show that physical activity can decrease the risk of breast cancer."

A study of post-menopausal women showed that women in this age group were also positively affected by exercise, she said. Women who engaged in three hours of vigorous exercise or four and one-half hours of moderate exercise each week were found to have 45 percent lower risk of breast cancer. However, when women had gained large amounts of weight, the statistics were less positive. Asian-American women and African-American women were included in this study with similar results.

While the results were relatively consistent across different populations, it was found that exercise was less likely to reduce risk in women with a family history of breast cancer, those who were obese, and those who had not given birth.

At this time, more than 30 studies have been completed, and all, with the exception of one, have found that consistent physical activity is significant in reducing the risk of breast cancer.

In 1995-96, the California Teachers Study was launched to further the knowledge of breast cancer development. Some 133,479 current and former teachers, identified by the state teachers' retirement system, were studied. Bernstein is director of the study.

Among the findings, Bernstein said, was that whether exercise reduces the risk of recurrence for women with breast cancer depends on the type of cancer. For women with in situ breast cancer, there was a 50 percent reduction in recurrence. For those with invasive breast cancer, the results were more modest – just 15 percent, she said.

When researchers looked at invasive breast cancer cases by estrogen receptor status, they learned that physical activity yielded a positive “marked effect” in ER negative cases, but no change in ER positive cases.

Bernstein said that for women with breast cancer, exercise seems to relieve cancer-related symptoms by reducing pressure and anxiety and enhancing the quality of life.

In future studies, Bernstein said, researchers must look at whether genes play a role in how physical activity lowers the risk of breast cancer; if there are biomarkers that best predict the impact of physical activity on breast cancer risk; what time periods in a woman's life are most important in terms of physical activity; how much activity is needed to lower the risk of occurrence; and standardizing the measurements to capture all dimensions of activity.

“We need to work with breast cancer survivors to increase their exercise, and motivate sedentary women to change their lifestyle,” she concluded.

Professor Joan Bloom of U.C. Berkeley's School of Public Health addressed the effects of physical activity on bone density for breast cancer survivors and women without breast cancer.

Bloom cited a study of 10-year survivors of breast cancer with a median age of 45. As time increases, the risk for chronic conditions such as osteoporosis and late effects of breast cancer also increase, researchers found. Early or abrupt menopause as a result of chemotherapy contributes to an increased risk, she said.

In addition, many women gain weight during chemotherapy, which is detrimental to bone health, Bloom said. An indirect effect of exercise is that it increases the probability that individuals will maintain a healthy weight.

“The evidence suggests exercise can reduce the loss of bone density,” she said. Exercise also increases vitality and a sense of well-being, and there is also evidence that the amount and frequency are associated with the reduction in menopause symptoms. However, not all exercise is equally effective. Running and weight training are the most effective; walking is less so and swimming is not at all effective in retaining bone density.

In another five-year study of breast cancer survivors, researchers found that there were lingering effects resulting from the treatment. Among them were physical discomfort, cognitive impairment, sexual difficulties and fears for the future – particularly about insurance.

“Longer and more intense intervention to encourage a consistent regimen of physical activity is needed,” she believes.

Bloom described a new study in progress in partnership with the YMCA in which breast cancer survivors who had chemotherapy work with a coach in weight training and aerobic conditioning programs to prevent osteoporosis and weight gain.

The mission of Marin County-based Zero Breast Cancer, formerly Marin Breast Cancer Watch, is to find the causes of breast cancer through community participation in the research process. The organization focuses on identifying environmental factors and the role they may play in the development of breast cancer at all stages of life.