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# Fighting Fatigue

BY LENA HUANG

*Exercise helps survivors combat a common post-treatment effect.*

As an anesthesiologist for a busy practice, Liz Almli, MD, was used to working long days and being on call. Then breast cancer hit three years ago.

Diagnosed with HER2-positive breast cancer, Almli, now 47, endured four months of Adriamycin (doxorubicin), Cytoxan (cyclophosphamide), and Taxol (paclitaxel), followed by a double mastectomy and Herceptin (trastuzumab). Fatigue hit hard during and after treatment, Almli says, and upon returning to work, she looked for ways to reclaim her energy.

She discovered Beat Cancer Boot Camp ([www.beatcancerbootcamp.com](http://www.beatcancerbootcamp.com)), a workout program based on a Navy SEAL boot camp regimen that includes strength training and aerobic exercises. The program is held in public parks in Tucson, Arizona, for survivors, their friends, and family members.



Beat Cancer Boot Camp founder, Anita Kellman (right), motivates Liz Almli, MD, to work out. Photo by Renee Stewart.

“Sometimes I’m tired, got a headache from work, and I really don’t want to exercise,” Almli says. “But then I get out in the sunshine, and after I exercise, I feel

great, and I'm so glad I went."

Researchers are discovering that exercise, which used to be considered something that would tire a fatigued survivor more, is in fact showing promise in alleviating the side effect.

### Fatigue Defined

According to the American Cancer Society, fatigue is the most common side effect of cancer and its treatments. Almost 50 percent of cancer survivors report fatigue that persists for months and even years after treatment.

Fatigue is felt on different levels with some survivors experiencing low energy, others feeling totally wiped out, and some feeling depressed or frustrated. Carole M. Schneider, PhD, director of the Rocky Mountain Cancer Rehabilitation Institute, says cancer-related fatigue is "multifactorial and probably has many causes."

Many cancer treatments, such as chemotherapy, radiation, and stem cell transplantation, cause fatigue by damaging healthy red blood cells while targeting the cancer cells. Red blood cells carry oxygen throughout the body to provide energy, and when the body has too few red blood cells, a condition called anemia, energy is decreased. The body also expends energy repairing damaged tissue and cleaning up cell waste from treatments.

Schneider, who is also a professor of sport and exercise science at the University of Northern Colorado, added that other treatment side effects such as diarrhea, vomiting, and loss of appetite can also cause fatigue. Cancer treatments can result in damage to the heart, pulmonary toxicity that decreases lung capacity, and/or damage to the liver or kidneys, which affects metabolism—all of which can contribute to fatigue. There may be other causes of fatigue that are simply not understood.

However, the good thing about exercise is, across the board, it helps in all these areas. "Exercise improves the cardiovascular, pulmonary, muscular, endocrine, immune, and neural systems," Schneider says.

### Ongoing Studies

In the past few years, many studies on exercise combating fatigue in survivors have emerged. Published in *The Cochrane Library* last year, a review of 28 studies (including a total of more than 2,000 patients of various cancer types) concluded that exercise is beneficial in treating cancer-related fatigue, but that further studies need to be done on the type, intensity, and timing of the exercise.

In many quality of life studies, fatigue is one of several indicators. One study published last year in the journal *Diseases of the Colon & Rectum* reported significantly higher quality of life and better fatigue scores in colorectal cancer survivors who met basic exercise guidelines. Two separate studies, one with ovarian cancer survivors and another with bladder cancer survivors, completed in 2007 also showed positive fatigue scores in survivors who participated in some

exercise.

Studies on breast cancer survivors and fatigue are more numerous than other cancer types. Karen Mustian, PhD, assistant professor at the University of Rochester Medical Center, James P. Wilmot Cancer Center in New York, recently completed a study on the impact of *tai chi* on breast cancer survivors. Participants undertook a 12-week program in which they participated in an hour-long *tai chi* class three times a week. And while the study group was small (11 *tai chi* participants and 10 in the control group), “we saw the control group getting more fatigued than the exercise group whose fatigue lessened over time,” Mustian says. (Read more about traditional Chinese medicine techniques in “[East Meets West](#).”)

Larger studies are under way. Mustian is currently working on the YOCAS (Yoga for Cancer Survivors) study, the largest study of yoga’s effect on cancer survivors. Currently they have about 340 participants of varying cancer types. The study is being conducted at more than 20 sites nationwide.

“We are looking at fatigue, sleep disruption, and depression, and I can’t tell you the results because the study is ongoing, but anecdotally I hear from around the country that survivors are liking it.” She says researchers hope to reach the study’s accrual goal of 400 and complete the study in 2010.

### Before You Start

While the precise exercise mechanisms that reduce fatigue are not known yet, both Schneider and Mustian agree that survivors first need to consult with their on-cologists before starting any exercise program because of the potential for complications.

“It is best to have patients work with exercise specialists that have been trained in cancer rehabilitation so that a safe program can be developed,” Schneider says. “We have found that cancer survivors can benefit from low to moderate intensity exercise both during and following treatment. If there is not a cancer rehabilitation program available, then it is great both during and after cancer treatment to walk short distances with rest periods.”

Walking is something Mustian also recommends to patients. “About the only thing that has consistently overlapped between all the [exercise studies] and all the different doses, whether it is home-based or group, is basic walking, basic aerobic walking,” she says. “And I’m not talking about going out and running a marathon, just a good walking program or adding more steps by using a pedometer.”

Before joining Beat Cancer Boot Camp, Almlie started with walking primarily because she was warned not to go to public places such as gyms because of her low blood counts during chemotherapy. Being outside, boot camp offered her the same freedom from the germs of a gym and from boredom of repetitive classes. It also offered her something else.

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—Karen Mustian, PhD

“Not only was the exercise energizing, but the comradery and support of other cancer survivors was instrumental in my mental recovery,” she says.

And although exercise helps Almli combat her fatigue, she emphasizes that exercise may also decrease her chances of recurrence.

“I was so happy on my last day of chemotherapy, but I was also scared because as I drove home I thought, ‘Now there is nothing to keep [the cancer] at bay,’ ” she says. Although retrospective exercise studies have shown only a modest benefit in preventing recurrence of breast cancer, for Almli, that research is enough.

“Exercise is something you can do instead of worrying about [the cancer] coming back. Then you can say if it comes back, it comes back, and I have done everything I could do to keep myself healthy.”