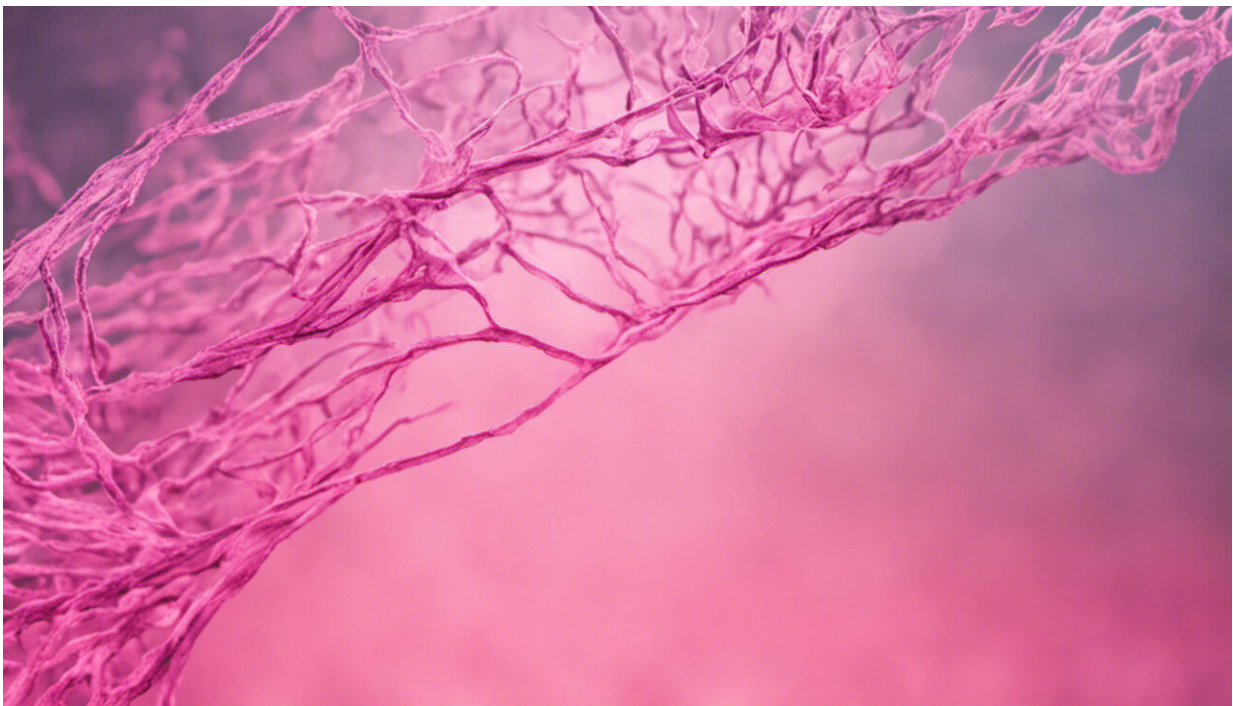


Breast cancer survivors who lose muscle mass can benefit from strength training, studies suggest

October 9 2018, by Lynn Panton And Ashley Artese



Credit: AI-generated image ([disclaimer](#))

Breast cancer research has resulted in treatment that has greatly improved survival rates. As a result, there are [3.1 million breast cancer survivors](#) alive in the United States today. The [five-year survival rate](#) is about 90 percent. This is great news.

But, survivors are still left to struggle with many [adverse side effects](#) from the disease and cancer treatments, which include surgery, radiation, chemotherapy and hormonal suppression drugs that are used to suppress hormones that may have fueled the breast cancer.

Particularly worrisome side effects are accelerated losses in bone [mineral](#) density and muscle mass – with gains in fat mass. These changes can lead to [osteoporosis and fractures](#), as well as lower strength, decreases in physical function, and becoming overweight and obese, which can lead to [poorer survival rates](#).

These side effects can ultimately reduce overall quality of life and increase the risk for chronic disease and disability in [breast cancer survivors](#).

Over the last 10 years, our laboratory has been evaluating the effects of [exercise](#) interventions, specifically resistance-type exercise on muscle mass, fat mass, bone mineral density, strength, physical function and quality of life in breast cancer survivors.

Survivors, already tough, get tougher and stronger

One of our first studies found that breast cancer survivors had lower [strength, upper-body bone mineral density and physical function](#) compared to women matched for age and weight who had not had cancer. Many of the breast cancer survivors had limited their activity after breast surgery, especially in the upper body, and were never advised to increase upper-body strength after the surgery site or sites had healed.

In our three-month and six-month intervention studies using resistance machines for both the upper body and lower body, we found about a [25 percent improvement](#) in both upper and lower body strength. Physical

function and quality of life also improved, with no adverse effects on [lymphedema](#), or swelling that can occur from damage to the lymph nodes, with either the low- or high-intensity [resistance training](#). Even the women who participated in high-intensity [resistance training](#) tolerated it well and experienced the added benefit of increasing muscle mass in both the upper and lower body after the three months of training.

In these two studies, women performed three or six months of resistance training on two nonconsecutive days each week. In the studies, the participants performed two or three sets of eight to 12 repetitions of each exercise. The exercises included chest press, biceps curl, triceps press down, overhead press, seated row, leg press, leg extension, leg curls, abdominal crunches and lower back hyperextensions. The amount of weight was increased as the women were able to achieve 10 to 12 repetitions on all sets.

Although we did not find increases in bone mineral density in our six-month training study, the women did not experience any decreases in these measures over the training period. [Bone mineral density](#) has been shown to decrease by 1 to 2 percent each year after menopause, and the losses may be higher in the first few years of menopause in healthy women. Therefore, being able to maintain bone mineral density in breast cancer survivors is a positive outcome, especially in the upper body, which is more susceptible to losses due to cancer treatment and disuse.

There are a limited number of studies that have evaluated resistance training on bone mineral density in survivors. Of those studies, only [maintenance in bone mineral density](#) has been found.

In studies with healthy premenopausal women, women have been able to achieve an increase in bone mineral density with resistance training. The benefits are best when resistance training is combined with high-impact activities, such as jumping, hopping and plyometrics. Plyometrics are

exercises that require one to jump down and jump up in one continuous movement. It involves repeated rapid stretching and contracting of the muscles.

In postmenopausal women and in some breast cancer survivors, most increases in bone mineral density are seen when [resistance training is combined](#) with medications that help to build bone.

More benefits on horizon with greater choices of exercise

In our third intervention study, we incorporated high-impact exercises that provided a variety of different loading patterns, since unusual loading patterns have been found to be more beneficial for improving bone mineral density than exercises that provide [consistent strain](#), like that of resistance training.

This study incorporated a six-month circuit of functional resistance training exercises that combined different high-impact exercises to provide women with unusual loading patterns. Exercises included lunges, squats, jumping jacks, burpees, push-ups, dumbbell rows, mountain climbers, step-ups, biceps curls, triceps extensions, running in place, high knee lifts and planks. The women progressed to more high-impact versions of these exercises through the six months. The exercise sessions lasted 45 minutes and were completed twice a week.

In this intervention, we used a group exercise format, as many breast cancer survivors report that they prefer to exercise with one other person or in a group setting compared to [exercising alone](#).

We compared this functional impact training program to a program of [yin yoga](#), or a slower-paced yoga in which postures are held for longer

periods, that consisted of non-weight-bearing stretching and relaxation postures. We again evaluated the effects on body composition, [bone mineral density](#), strength, physical function and quality of life over the six-month period.

We are currently analyzing the data for this project, but so far, the results look promising. Both the functional impact training and the yin yoga were effective in improving lower-body strength, physical function and quality of life. The functional impact training had the added benefit of improving upper-body strength, which is very important in the breast [cancer](#) population. Unfortunately, the functional impact training program was not effective in improving body composition or [bone mineral density](#).

These findings along with [previous research](#) highlight how important it is for health care providers to make sure that their patients get involved with some type of exercise that can improve body composition, strength, physical function and ultimately quality of life. There are a number of exercises and programs available for women to choose from. For women who may want to start off with yoga and then progress to more moderate to vigorous activity as they feel better, our studies provide evidence that benefits can be obtained safely from yin yoga and low intensity resistance training.

The studies also suggest that [women](#) can achieve greater benefits with higher-intensity resistance training and high-intensity functional [training](#) that incorporates intervals of strength and aerobic exercises.

This article is republished from [The Conversation](#) under a Creative Commons license. Read the [original article](#).

Provided by The Conversation

Citation: Breast cancer survivors who lose muscle mass can benefit from strength training, studies suggest (2018, October 9) retrieved 4 May 2024 from <https://medicalxpress.com/news/2018-10-breast-cancer-survivors-muscle-mass.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.