

Exercise Eases Lymphedema Symptoms

Strength-training exercises after breast cancer surgery won't worsen lymphedema and may actually reduce its symptoms, a randomized trial showed.

Weight lifting had no effect on the risk of arm swelling in postop breast cancer patients who already had lymphedema (11% of patients versus 12% of controls had at least 5% volume increase), Kathryn H. Schmitz, PhD, MPH, of the University of Pennsylvania in Philadelphia, and colleagues found.

But lymphedema symptoms and incidence of exacerbations dropped significantly in patients who followed a slow, progressive routine of resistance training, the researchers reported in the Aug. 13 issue of the *New England Journal of Medicine*.

These findings challenge the traditional recommendations against heavy lifting and resistance-training exercises that "overtire an arm at risk," noted Wendy Demark-Wahnefried, PhD, RD, in an accompanying editorial.

Those commonly used guidelines have actually been counterproductive, Schmitz said.

"By giving this advice, what might be happening is that those women's arms are becoming weaker and weaker," she explained in an interview.

"So when they do find themselves in a situation where they have to use the affected arm," she said, "almost anything they do with the arm will cause strain and, potentially, injury to the arm and may cause worsening of lymphedema."

Slowly building strength may allow the arm to withstand stress and strain without injury, she said.

But although the study results provide strong reassurance of safety for even a high-risk population, precautions still apply, cautioned Schmitz.

Compression stockings were used in the study during exercise, and women still need to be cautious about injuring their affected arm, she said. "Anything you can do to avoid things that are going to strain and stress the arm is a good idea."

Nor do the results imply weight training prevents lymphedema, Schmitz said.

Her group's trial included 141 breast cancer survivors with stable lymphedema randomized to usual care without a change in exercise level or to twice-weekly,

whole-body resistance training with increasing weight and repetitions done initially in group classes then on their own.

After one year, as expected, women in the weight-lifting group had improved more in upper- and lower-body strength than those under usual care (both $P < 0.001$).

However, worsening of lymphedema by at least 5% volume increase was no more common with weight training (cumulative incidence ratio 1.00, 95% confidence interval 0.88 to 1.13).

Women in the weight-lifting group also had greater improvements in self-reported severity of lymphedema symptoms compared with controls (between group difference in change from baseline -0.29 on a 4-point scale, $P = 0.03$).

Flare-ups of lymphedema (MedPage Today) -- assessed by a certified lymphedema specialist -- were half as common with strength training as with usual care (9 [14%] versus 19 [29%], $P = 0.04$), yet a nearly equal number of patients in the weight-training group sought consultation for a possible exacerbation (20 versus 23 in the control group).

Adjustment for cancer stage, number of nodes removed, race, and baseline physical activity, diet, and body mass index did little to change the results. Nor were there any serious adverse events related to the exercise intervention.

Cancer specialists asked about the implications of these results were generally positive but saw some challenges.

Ruth Oratz, MD, of NYU School of Medicine in New York City, was skeptical that the results would have much impact on practice since arm swelling -- "the outcome women really care about" -- was unchanged.

"Old dogma is hard to change," agreed Christine Laronga, MD, of the Moffitt Cancer Center in Tampa, Fla.

However, this study finally provides data in an area that has been largely based on anecdote with little literature to go on, said Laronga.

Also, commented Kent C. Osborne, MD, of Baylor College of Medicine in Houston, lymphedema is no longer the common problem it once was -- incidence plummeted with introduction of less radical surgery and sentinel lymph node biopsy.

But Schmitz countered that as breast cancer survival rates have climbed the ranks of at-risk and lymphedema-affected women have risen as well.

Where lymphedema still has its strongest hold is in disadvantaged populations, which tend to have a higher stage at diagnosis that requires more aggressive treatment, Demark-Wahnefried noted.

Strength-training intervention may be particularly worthwhile in these women because they also have more severe consequences for employment and fewer economic resources to cover loss of function, she wrote.

The researchers noted potential limitations of the study including the fact that the evaluations for exacerbations were not done by a single therapist and the possibility that some assessors may have become aware of the control/treatment assignments of the participants.

The study was supported by grants from the National Cancer Institute and the National Center for Research Resources. BSN Medical provided custom-fitted compression garments, and the fitness centers where the weight-lifting sessions took place (YMCA of Philadelphia and Vicinity, Sisters in Shape, and the Family YMCA of Burlington County, N.J.) provided discounted membership fees for study participants.

The researchers reported that they had no relevant conflicts of interest. Laronga, Osborne, and Oratz provided no information on conflicts of interest.

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Women who have had breast cancer surgery usually are told to avoid strength training -- also called resistance training or weight lifting -- to avoid worsening any lymphedema (pronounced LIMF-eh-DEE-ma) that might develop after surgery.

The study reviewed here seems to disprove this advice. The researchers found that strength training doesn't worsen lymphedema after breast cancer surgery and actually can help reduce the symptoms associated with lymphedema as well as the risk of lymphedema flare-ups.

Between 5% and 25% of women develop some lymphedema after breast cancer surgery. Lymphedema is a build-up of lymph fluid in the arm, which causes swelling. (Edema is the medical term for swelling.) Lymph fluid normally drains from body tissues through the lymph nodes and lymph channels. If some lymph nodes and channels are removed or damaged during surgery, lymph fluid doesn't drain properly and collects in the tissue near the surgery site.

Lymphedema can cause other symptoms such as tingling, numbness, stiffness, and weakness. Still, those problems can happen after breast cancer surgery even without lymphedema.

In this study, 141 women who developed lymphedema after breast cancer surgery were split into two groups. About half the women kept doing whatever exercise they were doing before the study started. The other women started doing whole-body (including arms) resistance exercises using weights 2 times per week. When the study started, the women's lymphedema was stable (not getting better or worse). The women were monitored for 1 year.

The women who started whole-body resistance exercises using weights:

- had better upper body strength
- were no more likely to have the lymphedema get worse
- were more likely to have lymphedema improve
- were less likely to have occasional lymphedema flare-ups

compared to women who didn't do resistance exercises.

Resistance training can improve arm and shoulder strength. Stronger arms and shoulders can help women get back to work and other personal activities that be might difficult after breast cancer surgery, especially if lymphedema develops. Still, the researchers caution that all women with lymphedema must be careful not to injure the arm during any exercise because bruises and scrapes can make lymphedema worse and cause complications, such as infection.

While these results are encouraging, it's important to note that this is only one small study. Some doctors may not want to change their recommendation to avoid resistance exercise after breast cancer surgery if lymphedema develops until more research is done. Still, if resistance training was part of your exercise routine before surgery, or if you're looking to build strength after surgery, you might want to talk to your doctor about the results of this study. Depending on your unique situation, you may want to ask your doctor if a referral to a physical or occupational therapy specialist with experience treating breast cancer surgery side effects makes sense. These specialists have experience with specific treatments and exercises that may improve your situation.

For more information on managing and avoiding lymphedema, visit the [Breastcancer.org Lymphedema](https://www.breastcancer.org/lymphedema) pages.