

Weight Lifting and Lymphedema: Clearing up Misconceptions

Written by Kathryn Schmitz, PhD, MPH, Associate Professor University of Pennsylvania

The purpose of this article is to clarify what the PAL trial results do and do not mean and to clarify how women with lymphedema should interpret the results for their own situation.

In August 2009, results of a large randomized controlled trial called the Physical Activity and Lymphedema or 'PAL' trial were published in the New England Journal of Medicine. The results indicated that slowly progressive weight training with no upper limit on the amount of weight lifted did not worsen swelling for women with breast cancer related lymphedema. Further, women in the weight-lifting group had half as many 'flare-ups' of their lymphedema that required therapist delivered intensive complete decongestive therapy, and that the number and severity of lymphedema symptoms were reduced by weight lifting. This is exciting news!

There was a large amount of media attention to the results, given that they run counter to what women had been told for decades, including prior versions of exercise guidelines from the National Lymphedema Network (NLN). Most women are told not to lift anything heavier than 5-15 pounds ever again with their affected limb to avoid worsening of lymphedema once they are diagnosed. The results of the PAL trial indicated that the guidance may not be accurate. However, not all of the media accounts of the PAL trial results were complete and, as a result, it has come to the attention of the leaders in the field of lymphedema clinical care that there are some misconceptions that require clarification. Though this article is written by the principal investigator of the PAL trial, it has been vetted and approved by the NLN Medical Advisory Committee as well.

Overall, the Medical Advisory Committee agrees that exercise is important and can be accomplished safely. However, lymphedema patients should not be cavalier about progressive weight-lifting. Patients should be mindful of the proper guidelines and should avoid rushing into weight-lifting without following some key safety guidelines (see below). Slow and steady is the way to go. It is important for patients to know their own body and how it responds; not to ignore signs of a possible exacerbation of swelling; to know what to do if there are signs of swelling or increased swelling, and to seek care from a certified lymphedema therapist when/if those signs occur.

Below we clarify some of the misconceptions that seem to have arisen based on media attention to the PAL trial results.

Misconception #1: Weight Training Prevents Lymphedema

WRONG! The PAL trial paper published in August 2009 did not address prevention of lymphedema. There is no evidence that weight training prevents lymphedema. Women with lymphedema should not be told that they could have prevented their condition by weight-lifting. That is a boldly inaccurate statement, not supported by the results of the PAL trial. There is a second paper that will be published from the PAL trial about the results in the 154 women in the study who did NOT have lymphedema. This separate paper will comment on prevention. Stay tuned.

Misconception #2: If weight-lifting is safe, and all those years we told women not to weight-lift, then all those other cautions like avoiding blood pressure or blood draws on the affected side must be wrong too.

WRONG! Nothing from this study should be interpreted as commenting on any other risk reduction guidelines beyond those related to exercise with weights. When lymph nodes are removed, the part of the body that was served by those lymph nodes is forever altered with regard to responding to infection, inflammation, injury, and trauma. The NLN Position Paper on Risk Reduction Practices (2008) recommended by the NLN Medical Advisory Committee were developed to assist women with avoiding infection, inflammation, injury, and trauma. Regardless of whether women do weight-lifting or not, or whether they have lymphedema or not, if lymph nodes have been removed, those guidelines are meant to prevent onset and worsening of lymphedema and are still applicable.

Misconception #3: The study results mean that all women with lymphedema can buy weights or a gym membership and do what they want without fear of their lymphedema getting worse.

WRONG! The intervention was done in a controlled way. There are a number of features of the study that were too detailed for the media reports. Here are some key safety features that were left out of the articles in the popular media, such as CBS World News Tonight, Time Magazine, USA Today, and the New York Times.

1. Lymphedema should be STABLE prior to starting weight-lifting. This means that there should have been no cellulitic infections that required antibiotics over the past three months and no more than 1 'flare-up' that required therapist delivered decongestive therapy in the past three months. Further, all of the women in the study had had no fluctuations in their arm volume for the past three months that were larger than 10%. Thankfully, most women who have lymphedema are stable, and most lymphedema is mild. There were only a handful of women who were not included in the study because they did not have stable lymphedema, and that was because we were at the end of the recruitment period for the study and could not wait for them to become stable. If your arm is not stable, as defined above, wait until it is to start weight-lifting.
2. Read and understand the following NLN Position Papers: Lymphedema Risk Reduction Practices, Exercise, Treatment, and Training of Therapists BEFORE starting weight-lifting, so that you can know what to look for and how to respond if you have a change in swelling or symptoms. All of the women in the PAL trial were required to attend a lymphedema education session that reviewed this material at the beginning of the study.
3. A well-fitted custom compression garment should be worn during all upper body weight-lifting exercises. Women in the PAL trial wore a sleeve and glove that came to the fingertips. The women took them off at the end of the session to complete stretches and shower, then re-donned them after the session if they wore a sleeve all day. The compression garments should be replaced every 6 months.
4. The upper body exercises should be started in a supervised setting, at low resistance, with someone who has training as a certified cancer exercise trainer (a certification offered through the American College of Sports Medicine) or training as a Certified Lymphedema Therapist. If the exercises are done with dumbbells, start with 1 to 3 lb

dumbbells. If the exercises are done with machines, start with the lightest possible weight.

5. Only progress to a higher weight after 2-4 sessions of doing the exercise with proper form (e.g., with a certified fitness professional or physical therapist watching and guiding to be sure that the movements are done correctly). Progressing to a higher weight should only occur if there have been NO CHANGES in the lymphedema symptoms.
6. If there is a change in symptoms that lasts a week or longer, stop doing upper body weight-lifting until you can get evaluated by a certified lymphedema therapist to be sure that there is not an exacerbation that requires treatment. You may continue lower body weight-lifting and aerobic exercise with the lower body during this time.
7. If you take a break from exercising that lasts a week or longer, regardless of the reason (e.g., vacation, illness, caring for a sick family member, work), back off on the weight lifted in the weight-lifting exercises. If you take a break that lasts 1 month or longer, start over with 1 to 3 lb weights and rebuild from there. IRREGULAR ATTENDANCE AT EXERCISE SESSIONS WAS THE HYPOTHESIZED CAUSE OF INJURY AND LYMPHEDEMA EXACERBATIONS FROM THE PAL TRIAL. IF YOU CANNOT DO WEIGHT-LIFTING TWO TIMES WEEKLY ON A REGULAR BASIS, IT IS LIKELY BETTER NOT TO DO IT AT ALL. THE WOMEN WITH IRREGULAR ATTENDANCE WERE MORE LIKELY TO GET INJURED OVERALL, NOT JUST TO HAVE PROBLEMS WITH LYMPHEDEMA.

Misconception #4. If I do weight-lifting, I will never have another exacerbation.

WRONG. There were women in the PAL trial who experienced exacerbations due to weight-lifting. Most of them did not follow the safety guidelines noted above. That's how we developed the safety guidelines noted above. Safety guidelines that were broken most often in the PAL trial were to have regular attendance and to back off on the weight if you take a week or longer off from exercise.

Misconception #5. If it is safe for me to do weight-lifting, then it is okay for me to lift heavy things at work or at home. My boss can ask me to lift heavy things at work now because the PAL trial results show it is safe for me to do so.

WRONG! The PAL intervention started upper body exercise with 1 lb dumbbells. Some women never progressed beyond 5 lb dumbbells on any exercise. Other women were able to progress to bench pressing 85 lbs. or more. Results will vary by prior fitness level and individual lymphedema and medical condition. Employers who use the PAL trial results as evidence that it is safe to have employees with lymphedema lift heavy objects are blatantly mis-interpreting the study results.

If a woman starts weight-training at 1 to 3 lbs, increases gradually over time, and experiences no negative effects from weight-lifting, her ability to safely lift heavy things at work and at home will gradually increase. The difficulty in translating the strength gains in the gym to strength gains at work and home is that we know how heavy the weights are, while we do NOT know how heavy a specific object at home or work might be. Caution is urged among women who do weight-lifting not to misjudge their new strength and inadvertently cause inflammation or injury in the affected arm by lifting something too heavy. That said, it does

seem likely that after progressive weight-lifting, the likelihood that common daily activities will result in lymphedema exacerbations is significantly reduced.

If an employer wants an employee with lymphedema to be able to lift heavy objects on a regular basis, the employer needs to provide free access to the certified lymphedema therapist to verify it is safe for the woman to engage in weight-lifting, free custom-fitted compression garments, free time with a certified fitness professional and/or physical therapist to learn how to do the exercises safely, free access to a fitness facility with adequate machines and weights, and paid time off work to do this training. Without these provisions, it would be inappropriate for employers to require employees with lymphedema to do heavy lifting.

Misconception #6: The PAL trial results mean it is safe for those with LOWER EXTREMITY lymphedema to do weight-lifting too.

The PAL investigation team has tried a pilot study to find out whether it is safe for those with lower extremity lymphedema to do weight-lifting. The results are quite inconclusive and funding has been sought to further investigate the safety of weight-lifting in patients with lower limb lymphedema. It is not appropriate, at this time, to extrapolate the results of the PAL trial to those with lower extremity lymphedema.