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**Concise review on the safety of exercise on symptoms of lymphedema**

Morris **C** *et al*. Exercise safety and lymphedema

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**Abstract**

Lymphedema is an atypical accumulation of high-protein fluid located just beneath the skin, which often occurs in the arm or leg. Exercising with lymphedema was traditionally considered to be unsafe. However, recent research indicates that exercise may be beneficial to individuals with lymphedema. Studies indicate that exercise can improve the range of motion and strength of the afflicted limb(s), as well as overall fitness and functional quality of life, and can be performed without exacerbating symptoms of lymphedema.

**Key words:** Quality of life; Lymphedema; Exercise; Breast cancer

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**Core tip:** Recent research lends credibility to the safety and efficacy of strength training in women with breast cancer-related lymphedema. Appropriately prescribed upper body resistance exercise, carried out under the supervision of a certified cancer exercise trainer is not likely to cause an increased risk of lymphedema or symptom exacerbation.

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**INTRODUCTION**

Lymphedema is an atypical accumulation of high-protein fluid located just beneath the skin, which often occurs in the arm or leg[1]. The fluid, or lymph, is a part of the lymphatic system. It is a colorless fluid containing white blood cells, which make it very important to the immune system. Its primary purpose is to remove toxins from the body by draining through the lymphatic system into the bloodstream. As cancer attacks the tissue, white blood cells flood the area in support of healing. The lymphedema experienced by individuals battling cancer is known as secondary lymphedema and is primarily seen following surgery or radiation. The most common cancers with this side effect are melanoma, breast cancer, testicular and prostate cancer, bladder and colon cancer, or any surgery that requires the removal of the lymph nodes[1]. Those afflicted with these forms of cancer often have multiple lymph nodes removed during treatment.

***Signs and symptoms of lymphedema***

Patients experiencing secondary lymphedema often describe it as a heavy feeling in the affected limb(s), tightness of the skin or tissue, decreased flexibility in the limb, or tightness and/or difficulty fitting into clothing in[1]. Lymphedema presents further risks such as cellulitis and lymphangitis, which are swelling of the connective tissues and lymphatic vessels. Signs and symptoms of lymphedema should not be ignored and should be treated by a medical professional or a certified lymphedema therapist.

***Treatment of lymphedema***

While there is no cure for lymphedema, there are tactics that can be used to treat the symptoms, manage ongoing edema, and prevent injury due to swelling. The two most popular methods of control are pressure garments and compression devices. Pressure garments are often made specifically for the afflicted patient, and are worn at all times, whereas compression devices are used intermittently. Compression devices are pumps that are attached to a sleeve that is wrapped around the area[2]. Both work by keeping constant pressure on the area, keeping lymph from building up by helping the fluid move. During exercise, one should wear a pressure garment while exercising the affected limb to further prevent swelling.

**EXERCISE AND LYMPHEDEMA**

Exercising with lymphedema was traditionally considered to be unsafe. However, recent research indicate that exercise may be beneficial to individuals with lymphedema[1,3]. A recent 8-wk home-based exercise study on postmastectomy patients experiencing lymphedema revealed an improvement in the affected limb regarding both volume and circumference, as well as an improved quality of life[4]. The weight loss that often accompanies exercise can help reduce the effects of lymphedema by improving overall circulation, which helps remove the lymph out of the affected area and can decrease swelling[3].

A second study involving heavy resistance exercise for the upper body revealed that exercise was effective in improving muscular strength, endurance, and quality of life. In addition, no differences were noted with regards to arm swelling and symptom severity. Therefore, the researchers concluded resistance training was safe in patients with lymphedema.

A systemic review of existing literature concluded that resistance exercise was did not exacerbate breast cancer-related lymphedema. Provided the exercise trainer had the proper training, researchers concluded that it was safe for breast cancer survivors to perform both aerobic and strength training exercise during and after cancer treatment [5].

**CONCLUSION**

In conclusion, research indicates that resistance exercise is safe and effective in women with lymphedema[6]. Women with breast cancer-related lymphedema who perform appropriately prescribed upper body resistance exercise under the supervision of a certified cancer exercise trainer can do so without fear of an increased risk of lymphedema or symptom exacerbation[7]. Exercise can improve the range of motion and strength of the afflicted limb(s), as well as overall fitness and functional quality of life.

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