Exercise for Women With or at Risk for Breast Cancer-Related Lymphedema


Introduction
Breast cancer is one of the most common forms of cancer diagnosed in American women each year. Lymphedema is a possible complication following breast cancer treatments such as radiation, chemotherapy, and surgery due to the potential damage to the lymphatic system with these treatments. Breast cancer-related lymphedema is an atypical chronic inflammation to the upper extremities resulting from an accumulation of protein-rich edema. Symptoms of lymphedema include pain, heaviness, and tightness. There are three stages of lymphedema. Stage I is reversible. Stage I and II are possible following breast cancer treatment as is stage III, but stage III is rarely seen in this population.

Traditional treatments for lymphedema include:
• compression garments
• elevation
• retrograde massage
• physical therapy

It has long been accepted that using an upper extremity following breast cancer treatment to perform strenuous or repetitive activities may initiate or exacerbate lymphedema.

Purpose
To perform a systematic review of recent studies that investigate the effects of upper extremity resistance training and aerobic training in women with and at risk for breast cancer-related lymphedema.

Two questions were addressed in this study:
• “Does aerobic or resistance exercise lead to lymphedema in women who are at risk for the condition?”
• “Does aerobic or resistance exercise reduce or exacerbate pre-existing lymphedema?”

Methods and Materials
Systematic review research was performed in 2006. Databases searched include: • CINAHL • EMBASE • MEDLINE • PEDRO • PubMed

Search terms used include:
• “breast cancer”
• “exercise”
• “lymphedema”

From this search, following exclusion of irrelevant articles, eight articles were found that relate specifically to breast cancer-related lymphedema and resistance or aerobic exercise; six articles involved women at risk for breast cancer-related lymphedema, two articles involved women with pre-existing breast cancer-related lymphedema.

All eight articles’ hierarchy of evidence were ranked by using Sackett’s levels of evidence (level I being the highest level, level V being the lowest level).

Research Articles Related to Exercise in the Women at Risk for Breast Cancer-Related Lymphedema

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<thead>
<tr>
<th>Article Type</th>
<th>Sackett Level</th>
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<tr>
<td>Case Series (2001)</td>
<td>Level V</td>
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<td>One-group, pretest-posttest study (2002)</td>
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<td>Randomized Control Trial (2003)</td>
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<td>One-group, pretest-posttest study (2004)</td>
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Research Articles Related to Exercise in Women with Pre-existing Breast Cancer-Related Lymphedema

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Clinical Significance
The research topic of breast-cancer related lymphedema is relevant to physical therapy because lymphedema is one of the most common complications following breast-cancer treatment with lymph node removal. Physical therapists must know what interventions are appropriate for this patient population. For years it has been believed that exercise such as aerobic training and upper extremity resistance exercises could lead to lymphedema. This research is introducing the concept that exercise following lymph node removal may be safe and can be used in addition to traditional treatments for women with pre-existing lymphedema or as preventive treatment for women at risk for breast cancer-related lymphedema.

Conclusion
This research is introducing the concept that exercise following lymph node removal in women with or at risk for breast cancer-related lymphedema may be safe. However, further research must be conducted. This systematic review was able to conclude that exercise did not exacerbate lymphedema in subjects with the pathology or initiate lymphedema in those subjects at risk.

Summary
For years it has been believed that exercise may initiate or exacerbate breast cancer-related lymphedema. These studies all dispute this theory and provide statistical evidence supporting the concept that exercise is safe for women with or at risk for breast-cancer related lymphedema. This is important to physical therapists so that when they are establishing appropriate interventions for women following breast cancer and lymph node removal, exercise and resistance will be included.

Article 1: Evidence

Article further supports the safety of exercise for women at risk for breast-cancer related lymphedema, but does not study the effect of exercise on women with breast-cancer related lymphedema. Statistically this article supports that women exercising and not exercising are at equal risk for developing lymphedema. Therefore, the statistical results support the primary article theory that exercise is safe and does not increase the incidence of lymphedema in women who have had breast cancer and lymph node removal.

Article 2: Evidence

Article 2 further supports the safety, and even benefits, of exercise for women with breast-cancer related lymphedema, but does not study the effect of exercise on women at risk for breast-cancer related lymphedema. This study’s results show that a statistically significant decrease in upper extremity circumference and volume related to lymphedema occurred following the eight week home-based exercise program. Therefore, this study also supports the primary article’s view that exercises is safe for subjects with breast-cancer related lymphedema and will not lead to an exacerbation of symptoms.

Presented by Jessica Ketterer, DPT student