

# Conservative Intervention Strategies for Adult Cancer-Related Lymphedema: A Systematic Review and Network Meta-Analysis

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**PROBLEM IDENTIFICATION:** The comparative effectiveness of available management options for cancer-related secondary lymphedema is unknown.

**LITERATURE SEARCH:** CINAHL®, Embase®, and MEDLINE® were searched for randomized trials comparing conservative treatment strategies.

**DATA EVALUATION:** A network meta-analysis was conducted for lymphedema volume, along with pairwise meta-analyses for remaining outcomes. Evidence certainty was assessed using the GRADE (Grading of Recommendations, Assessment, Development, and Evaluation) approach.

**SYNTHESIS:** Overall, 36 studies with a total of 1,651 participants were included. Compared to standard care, conservative treatments did not significantly reduce lymphedema volume. There was low to very low certainty evidence of benefit for several treatments on secondary outcomes.

**IMPLICATIONS FOR PRACTICE:** There is insufficient evidence to suggest important differences between standard care and conservative treatment strategies for reducing lymphedema volume and improving lymphedema-related symptoms.

**KEYWORDS** secondary lymphedema; complete decongestive therapy; systematic review; cancer  
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Lymphedema is a localized swelling related to the collection of interstitial fluid resulting from improper lymphatic system drainage (Rockson, 2001). In addition to swelling, lymphedema is associated with a range of physical symptoms, including pain, heaviness, and tightness, as well as psychological symptoms, including distress, anxiety, and decreased quality of life (Fu et al., 2013). Primary lymphedema is attributable to an intrinsic fault in the lymphatic vessels, whereas secondary lymphedema is attributable to damaged lymphatic vessels or nodes, such as from surgery, radiation therapy, trauma, or infection (Shaitelman et al., 2015). Secondary lymphedema can be caused by lymphatic filariasis and cancer. Cancer-related lymphedema can be from breast, genitourinary, gynecologic, or head and neck cancers, as well as melanoma (Paskett et al., 2012).

Cancer-related lymphedema is a progressive chronic condition, with considerable burden on physical and psychosocial health, and it is associated with significant health system and out-of-pocket costs (Fu et al., 2013; Paskett et al., 2012; Shaitelman et al., 2015; Shih et al., 2009). It affects an estimated 5%–30% of cancer survivors, varying depending on the type of cancer, as well as other risk factors associated with cancer treatment (e.g., number of lymph nodes removed, number of sessions of radiation therapy), post-treatment care (e.g., infection prevention, surveillance), and patient characteristics (e.g., body mass index [BMI]) (Cormier et al., 2010; Jammallo et al., 2013; Shaitelman et al., 2015). The diagnosis of extremity lymphedema is related to the difference in the volume of the affected limb compared to the unaffected limb, or to the baseline