

Liposuction for Debulking Upper and Lower Extremity Lymphedema: A Systematic Review

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Background. Surgical debulking with liposuction is a technique to reduce extremity volume in primary and secondary lymphedema. Historically, ablative lymphedema procedures ranged from radical excision to staged tissue removal with primary closure. However, the efficacy of debulking with liposuction has not been well quantified. Therefore, this study evaluates surgical debulking outcomes in lymphedema patients.

Methods. We searched PubMed/Medline, EMBASE, Web of Science, and Cochrane Library databases for studies reporting liposuction treatment for lymphedema. Search terms included “cytoreductive surgical procedures”, “lipectomy”, “liposuction”, “debulking”, “lymphedema” and related synonyms. Studies involving massive tissue resections, or unspecified debulking methods, or involved staged procedures, or did not quantify change in extremity volume following surgery, abstracts, reviews, letters, comments, guidelines, non-English, consensus statements and studies without full text were excluded. Two researchers reviewed the articles independently to apply inclusion and exclusion criterias, then extracted data for descriptive analysis.

Results. 389 studies were initially identified; sixteen studies remained for final review. Extremity excess volumes were reduced following debulking with liposuction at all time points regardless of specific technique. Extremities debulked with either vacuum-assisted or power-assisted liposuction had greater volume reduction at all time points when compared with those treated with continuous compression alone. The combination of liposuction with postoperative compression therapy produced sequentially increasing volume reduction up to one year with sustained results beyond this time point.

Conclusion. Liposuction is effective for debulking limb lymphedema. Further studies are needed to quantify patient-related outcomes like quality of life, treatment associated morbidity and improvement in symptoms.