Collected Scientific Research Relating to the Use of Osteopathy with Lymphedema

Important:

- 1) Osteopathy involves helping people's own self-healing abilities to work better, rather that focussing primarily on particular conditions.
- 2) Each person is different, and osteopathy treats them differently.

Therefore people respond to osteopathic treatment in different ways. Treatments that work for one person cannot be guaranteed to work for another person in the same way. The fact that there is scientific research supporting a treatment in a group of people does not mean that it will always work in the same way (which is probably true of all research).

A number of things make research into osteopathy challenging. These include the two aspects of osteopathy mentioned above, and also the lack of major commercial interests to provide funding in expectation of financial returns. At the same time, there is an emerging body of research demonstrating the usefulness of osteopathic treatment.

More research is being done all of the time. I am not aware of any research which shows that osteopathic treatment, delivered by a qualified osteopath, is ineffective in relation to this area. If you are aware of any studies that show that, please bring them to my attention.

Please note: there is room for debate about the classifications used for these studies. Please let John Smartt know if you believe that any of these classifications are incorrect.

These studies are from peer-reviewed journals

Number of studies:

Number of studies:

Clinically and statistically significant results

Systematic reviews

Number of studies: 2

Shao Y, Zhong DS. 2016 **Manual lymphatic drainage for breast cancer-related lymphoedema.** Eur J Cancer Care (Engl) May 11 *https://www.ncbi.nlm.nih.gov/pubmed/27167238*

"Breast cancer-related lymphoedema (BCRL) is a common sequela of surgical or radiation therapy of breast cancer. Although being an important part of conservative therapy, the role of manual lymphatic drainage (MLD) on BCRL is still debating. The objective of the current systematic review and meta-analysis was to determine whether the addition of MLD to the standard therapy (ST) could manage BCRL more effectively. We searched PubMed, EMBASE and Cochrane Library for related randomised clinical trials to compare the volume reduction, improvement of symptoms and arm function between groups with or without MLD. Four randomised controlled trials, with 234 patients, were included. Results showed there was a significant difference in volume reduction between MLD plus routine treatment and sole routine treatment. Current trials show that adding MLD to the ST could enhance the effectiveness of treating volume reduction of lymphoedema, but might not improve subjective symptoms or arm function."

Ezzo J, Manheimer E, McNeely ML, Howell DM, Weiss R, Johansson KI, Bao T, Bily L, Tuppo CM, Williams AF, Karadibak D. 2015 **Manual lymphatic drainage for lymphedema following breast cancer treatment** Cochrane Database Syst Rev May 21;5:CD003475 *http://www.ncbi.nlm.nih.gov/pubmed/25994425*

"MLD is safe and may offer additional benefit to compression bandaging for swelling reduction. Compared to individuals with moderate-to-severe BCRL, those with mild-to-moderate BCRL may be the ones who benefit from adding MLD to an intensive course of treatment with compression bandaging. This finding, however, needs to be confirmed by randomized data. In trials where MLD and sleeve were compared with a non-MLD treatment and sleeve, volumetric outcomes were inconsistent within the same trial. Research is needed to identify the most clinically meaningful volumetric measurement, to incorporate newer technologies in LE assessment, and to assess other clinically relevant outcomes such as fibrotic tissue formation. Findings were contradictory for function (range of motion), and inconclusive for quality of life. For symptoms such as pain and heaviness, 60% to 80% of participants reported feeling better regardless of which treatment they received. One-year follow-up suggests that once swelling had been reduced, participants were likely to keep their swelling down if they continued to use a custom-made sleeve."

Randomised controlled trials

Melam GR, Buragadda S, Alhusaini AA, Arora N. 2016 Effect of complete decongestive therapy and home program on health- related quality of life in post mastectomy lymphedema patients. BMC Womens Health May 4;16:23 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4855407/

"BACKGROUND:

Secondary lymphedema is common in women treated for breast cancer. It may be a result of surgery or radiotherapy. Edema commonly affects the arm, leading to discomfort, reduced arm movements, pain and diminished quality of life. Therefore, the relationship between post mastectomy lymphedema and quality of life has evolved as an important criteria in treatment of breast cancer survivors.

METHODS:

Sixty breast cancer survivors who developed post mastectomy lymphedema were recruited. Patients were divided into 2 groups (n = 30) according to the treatment they received; Conventional therapy (CT) and Complete Decongestive Therapy (CDT) groups. Measurements were taken at baseline, 4 and 6 weeks. Health related Quality of Life was evaluated with the EORTC QLQ C30 and EORTC QLQ-BR23 questionnaires. Pain was measured using the Visual Analogue Scale. Descriptive statistics were used to analyze participant demographics and repeated measures of ANOVA was used for within and between group comparisons. RESULTS:

Both groups showed improved quality of life and diminished pain after 6 weeks of treatment. However, greater improvement was observed in CDT group compared to the CT group. CONCLUSION:

In this study, remedial exercises and home program in addition to manual lymphatic drainage and compression bandaging resulted in improved quality of life. Early identification of lymphedema and incorporation of remedial exercises and a home program improve the quality of life for breast cancer survivors."

Cho Y, Do J, Jung S, Kwon O,, Jeon JY 2015 Effects of a physical therapy program combined with manual lymphatic drainage on shoulder function, quality of life, lymphedema incidence, and pain in breast cancer patients with axillary web syndrome following axillary dissection. Support Care Cancer Nov 5 http://www.ncbi.nlm.nih. gov/pubmed/26542271

"The aim of this study was to evaluate the effects of physical therapy (PT) combined with manual lymphatic drainage (MLD) on shoulder function, pain, lymphedema, visible cords, and quality of life (QOL) in breast cancer patients with axillary web syndrome (AWS)."
"METHODS:

In this prospective, randomized trial, 41 breast cancer patients with visible and palpable cords on the arm and axilla and a numeric rating scale (NRS) pain score of >3 were randomly assigned to PT (3 times/week for 4 weeks; n = 20) and PT combined with MLD (5 times/week for 4 weeks; PTMLD; n = 21) groups. MLD was performed by a physical therapist and the patients themselves during week 1 and weeks 2-4, respectively. Arm volume, shoulder function (muscular strength; active range of motion; and disabilities of the arm, shoulder, and hand [DASH]); QOL (European Organization for Research and Treatment of Cancer Core and Breast Cancer-Specific QOL questionnaires), and pain (NRS) were assessed at baseline and after 4 weeks of treatment.

RESULTS:

QOL including functional and symptom aspects, shoulder flexor strength, DASH, and NRS scores were significantly improved in both groups after the 4-week intervention (P < 0.05). NRS score and arm volume were significantly lower in the PTMLD group than in the PT group (P < 0.05). Lymphedema was observed in the PT (n = 6), but not PTMLD, group (P < 0.05). CONCLUSIONS: PT improves shoulder function, pain, and QOL in breast cancer patients with AWS and combined with MLD decreases arm lymphedema."

Bergmann A, da Costa Leite Ferreira MG, de Aguiar SS, de Almeida Dias R, de Souza Abrahao K, Paltrinieri EM, Martinez Allende RG, Andrade MF. 2014 **Physiotherapy in upper limb lymphedema after breast cancer treatment: a randomized study.** Lymphology Jun;47(2):82 -91. http://www.ncbi.nlm.nih.gov/pubmed/25282874

"Volume reduction was highly significant, independent of the intervention (p < 0.001), and both treatments led to an average of percentage volume excess reduction (PVER) of 15.02%."

"Both treatment groups demonstrated absolute and relative reductions of excess limb volume"

Bertelli DF, de Oliveira P, Gimenes AS, Moreno MA. 2013 **Postural drainage and manual lymphatic drainage for lower limb edema in women with morbid obesity after bariatric surgery: a randomized controlled trial.** Am J Phys Med Rehabil Aug;92(8):697-703 http://www.ncbi.nlm.nih.gov/pubmed/23370584

"The treatment protocols promoted reductions in volume values, suggesting that both techniques could be used to help reduce lower limb edema"
"Nevertheless, the best results were obtained with MLD. [manual lymphatic drainage]"

Bongi SM, Del Rosso A, Passalacqua M, Miccio S, Cerinic MM. 2011 **Manual lymph drainage improving upper extremity edema and hand function in patients with systemic sclerosis in edematous phase.** Arthritis Care Res (Hoboken) Aug;63(8):1134-41 http://www.ncbi.nlm.nih. gov/pubmed/21523925

"In SSc [systemic sclerosis/scleroderma], MLD [manual lymphatic drainage] significantly reduces hand edema and improves hand function and perceived QOL [Qaulity of Life]."

Case contolled studies

Tan IC, Maus EA, Rasmussen JC, Marshall MV, Adams KE, Fife CE, Smith LA, Chan W, Sevick-Muraca EM. 2011 **Assessment of lymphatic contractile function after manual lymphatic drainage using near-infrared fluorescence imaging** Arch Phys Med Rehabil May;92(5):756 -764.e1. https://www.ncbi.nlm.nih.gov/pubmed/21530723

OBJECTIVE:

To investigate the feasibility of assessing the efficacy of manual lymphatic drainage (MLD), a method for lymphedema (LE) management, by using near-infrared (NIR) fluorescence imaging. DESIGN:

Exploratory pilot study.

SETTING:

Primary care unit.

PARTICIPANTS:

Subjects (N=10; age, 18-68y) with a diagnosis of grade I or II LE and 12 healthy control subjects (age, 22-59y).

INTERVENTION:

Indocyanine green (25 μ g in 0.1 mL each) was injected intradermally in bilateral arms or legs of subjects. Diffused excitation light illuminated the limbs, and NIR fluorescence images were collected by using custom-built imaging systems. Subjects received MLD therapy, and imaging was performed pre- and posttherapy.

MAIN OUTCOME MEASURES:

Apparent lymph velocities and periods between lymphatic propulsion events were computed from fluorescence images. Data collected pre- and post-MLD were compared and evaluated for differences.

RESULTS:

By comparing pre-MLD lymphatic contractile function against post-MLD lymphatic function, results showed that average apparent lymph velocity increased in both the symptomatic (+23%) and asymptomatic (+25%) limbs of subjects with LE and control limbs (+28%) of healthy subjects. The average lymphatic propulsion period decreased in symptomatic (-9%) and asymptomatic (-20%) limbs of subjects with LE, as well as in control limbs (-23%). CONCLUSIONS:

We showed that NIR fluorescence imaging could be used to quantify immediate improvement of lymphatic contractile function after MLD.

Other controlled clinical trials

Pereira De Godoy JM, Franco Brigidio PA, Salles Cunha SX, Batigália F, De Fatima Guerreiro Godoy M. 2013 **Mobilization of fluids in large volumetric reductions during intensive treatment of leg lymphedema.** Int Angiol Oct;32(5):479-82. http://www.ncbi.nlm.nih.gov/pubmed/23903306

"AIM:

The aim of the current study was to evaluate fluid mobilization during the intensive treatment of leg lymphedema.

METHODS:

The mobilization of intracellular and extracellular fluids in the lower and upper extremities and trunk was evaluated with the intensive treatment of leg lymphedema in a prospective study. Mobilization of fluids was assessed by bioelectrical impedance using the InBody S10 device in ten patients with leg lymphedema, regardless of the cause. Treatment consisted of six to eight hours per day of Manual Lymphatic Therapy (Godoy & Godoy technique), Mechanical Lymphatic Therapy (RAGodoy device®) and a non-elastic cotton-polyester stocking. RESULTS AND CONCLUSION:

A significant reduction in total water was observed for the lymphedematous limb, but with an increase in intracellular water of from 59% to 61%. Additionally, total water increases were observed in the limbs without lymphedema and in the trunk. There was an increase in total intracellular water of the extremities and trunk, but without any change in the extracellular water. In high-volume reductions during lymphedema treatment, fluids are displaced from the lymphedematous limb to extremities without lymphedema and to the trunk."

Leduc O, Crasset V, Leleu C, Baptiste N, Koziel A, Delahaie C, Pastouret F, Wilputte F, Leduc A. 2011 Impact of manual lymphatic drainage on hemodynamic parameters in patients with heart failure and lower limb edema. Lymphology Mar;44(1):13-20. https://journals.uair.arizona.edu/index.php/lymph/article/view/17022

"Since 1990, it has been thought that ISPT [intermittent sequential pneumatic therapy] applied to both lower limbs simultaneously should not be used for patients with heart failure because right atrial, pulmonary arterial, and pulmonary wedge pressures may increase to a critical point.

"MLD [manual lymphatic drainage] treatment significantly decreased the limbs as expected. The heart rate also decreased following MLD in contrast with all other hemodynamic parameters which were not affected by MLD. The findings suggest that there is no contraindication to use MLD in patients with heart failure and lower limb edema."

Piso DU, Eckardt A, Liebermann A, Gutenbrunner C, Schäfer P, Gehrke A. 2001 **Early rehabilitation of head-neck edema after curative surgery for orofacial tumors.** Am J Phys Med Rehabil Apr;80(4):261-9. http://www.ncbi.nlm.nih.gov/pubmed/11277132

"This initial trial demonstrates that sequential therapy of manual lymphatic drainage and compression garments can significantly reduce early postoperative edema after curative surgery for orofacial tumors."

Cohort studies

Number of studies: 2

Smith BG, Hutcheson KA, Little LG, Skoracki RJ, Rosenthal DI, Lai SY, Lewin JS. 2015 Lymphedema outcomes in patients with head and neck cancer. Otolaryngol Head Neck Surg Feb;152(2):284-91 http://www.ncbi.nlm.nih.gov/pubmed/25389318

"OBJECTIVE:

We sought to describe the presentation of external head and neck lymphedema in patients treated for head and neck cancer and to examine their initial responses to complete decongestive therapy.

STUDY DESIGN:

Case series with chart review.

SETTING:

MD Anderson Cancer Center, Houston, Texas.

SUBJECTS AND METHODS:

The charts of patients who were evaluated for head and neck cancer at MD Anderson Cancer Center after treatment (January 2007-January 2013) were retrospectively reviewed. Response to complete decongestive therapy was evaluated per changes in lymphedema severity rating or surface tape measures. Predictors of therapy response were examined on the basis of regression models.

RESULTS:

The cases of 1202 patients were evaluated. Most patients (62%) had soft reversible pitting edema (MD Anderson Cancer Center stage 1b). Treatment response was evaluated for 733 patients; 439 (60%) improved after complete decongestive therapy. Treatment adherence independently predicted complete decongestive therapy response (P < .001). CONCLUSIONS:

These data support the effectiveness of a head and neck cancer-specific regimen of lymphedema therapy for cancer patients with external head and neck lymphedema. Our findings suggest that head and neck lymphedema is distinct from lymphedema that affects other sites, thus requiring adaptations in traditional methods of management and measurement."

Tacani PM, Franceschini JP, Tacani RE, Machado AF, Montezello D, Góes JC, Marx A. 2014 Retrospective study of the physical therapy modalities applied in head and neck lymphedema treatment. Head Neck Oct 21 http://www.ncbi.nlm.nih.gov/pubmed/25332118

"The physical therapy modalities based on strategic MLD [manual lymphatic drainage], shoulder girdle massage, facial, tongue and neck exercises, compressive therapy at home and patient education showed reduction of the lymphedema and pain, both of them secondary to head and neck cancer treatment."

Case reports

Number of studies: 2

Wilson CM, Ronan SL 2010 **Rehabilitation postfacial reanimation surgery after removal of acoustic neuroma: a case study.** J Neurol Phys Ther Mar;34(1):41-9 http://www.ncbi.nlm.nih.gov/pubmed/20212367

"The patient had chronic difficulty with left-sided lymphedema, requiring frequent manual lymphatic drainage."

"Data from this case study suggest that physical therapy management improves functional outcomes for individuals with postoperative changes in facial motor function from facial reanimation surgery."

Liao SF, Huang MS, Chou YH, Wei TS. 2003 **Successful complex decongestive** physiotherapy for lymphedema and lymphocutaneous reflux of the female external

genitalia after radiation therapy. J Formos Med Assoc Jun;102(6):404-6. http://www.ncbi.nlm. nih.gov/pubmed/12923593

"Lymphatic discharge and folliculitis were markedly improved after a 3-week course of treatment."