

Collected Scientific Research Relating to the Use of Osteopathy with Cancer (people with)

Important:

1) Osteopathy involves helping people's own self-healing abilities to work better, rather than 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.

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: 12

Clinically and statistically significant results

Number of studies: 12

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."

Other reviews

Number of studies: 1

Godette K, Mondry TE, Johnstone PA 2006 **Can manual treatment of lymphedema promote metastasis?** J Soc Integr Oncol Winter;4(1):8-12. <http://www.ncbi.nlm.nih.gov/pubmed/16737666>

"Cancer research supports the contention that this therapy does not contribute to spread of disease and should not be withheld from patients with metastasis."

Randomised controlled trials

Number of studies: 5

Castro-Martín E, Ortiz-Comino L, Gallart-Aragón T, Esteban-Moreno B, Arroyo-Morales M, Galiano-Castillo N. 2017 **Myofascial Induction Effects on Neck-Shoulder Pain in Breast Cancer Survivors: Randomized, Single-Blind, Placebo-Controlled Crossover Design.** Arch Phys Med Rehabil May;98(5):832-840 <https://www.ncbi.nlm.nih.gov/pubmed/28003133>

"OBJECTIVES:

To (1) investigate the immediate effects of myofascial induction (MI), with placebo electrotherapy as a control, on perceived pain, cervical/shoulder range of motion (ROM), and mood state in breast cancer survivors (BCSs) with shoulder/arm morbidity; and (2) examine the relationships between pain modifications and cervical/shoulder ROM on the side affected by breast cancer.

DESIGN:

Randomized, single-blind, placebo-controlled crossover study.

SETTING:

Physical therapy laboratory.

PARTICIPANTS:

BCSs (N=21) who had a diagnosis of stage I-IIIa breast cancer and had completed adjuvant therapy (except hormonal treatment).

INTERVENTION:

During each session, the BCSs received either an MI (fascial unwinding) intervention focused on the upper limb area following the Pilat approach or placebo pulsed shortwave therapy (control group). Each session lasted 30 minutes, and an adequate washout period of 4 weeks between sessions was established.

MAIN OUTCOME MEASURES:

The visual analog scale (VAS) for pain and anxiety, shoulder-cervical goniometry for ROM, the Profile of Mood States for psychological distress, and the Attitudes Towards Massage Scale were used.

RESULTS:

An analysis of covariance (ANCOVA) revealed significant time × group interactions for VAS affected arm (P=.031) but not for VAS cervical (P=.332), VAS nonaffected arm (P=.698), or VAS anxiety (P=.266). The ANCOVA also revealed significant interactions for affected shoulder flexion (P<.001), abduction (P<.001), external rotation (P=.004), and internal rotation (P=.001). Significant interactions for affected cervical rotation (P=.022) and affected cervical lateral flexion (P=.038) were also found. A significant negative correlation was found between changes in VAS affected arm and shoulder/arm internal rotation ROM (r=-.46; P=.03).

CONCLUSIONS:

A single MI session decreases pain intensity and improves neck-shoulder ROM to a greater degree than placebo electrotherapy for BCSs experiencing pain.

TRIAL REGISTRATION:

ClinicalTrials.gov NCT02859168."

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/pubmed/26803133>

"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"

Hernandez-Reif M, Ironson G, Field T, Hurley J, Katz G, Diego M, Weiss S, Fletcher MA, Schanberg S, Kuhn C, Burman I. 2004 **Breast cancer patients have improved immune and neuroendocrine functions following massage therapy.** J Psychosom Res Jul;57(1):45-52
<https://www.ncbi.nlm.nih.gov/pubmed/15256294>

"OBJECTIVES:

Women with breast cancer are at risk for elevated depression, anxiety, and decreased natural killer (NK) cell number. Stress has been linked to increased tumor development by decreasing NK cell activity. The objectives of this study included examining massage therapy for women with breast cancer for (1) improving mood and biological measures associated with mood enhancement (serotonin, dopamine), (2) reducing stress and stress hormone levels, and (3) boosting immune measures.

METHODS:

Thirty-four women (M age=53) diagnosed with Stage 1 or 2 breast cancer were randomly assigned postsurgery to a massage therapy group (to receive 30-min massages three times per week for 5 weeks) or a control group. The massage consisted of stroking, squeezing, and stretching techniques to the head, arms, legs/feet, and back. On the first and last day of the study, the women were assessed on (1) immediate effects measures of anxiety, depressed mood, and vigor and (2) longer term effects on depression, anxiety and hostility, functioning, body image, and avoidant versus intrusive coping style, in addition to urinary catecholamines (norepinephrine, epinephrine, and dopamine) and serotonin levels. A subset of 27 women (n=15 massage) had blood drawn to assay immune measures.

RESULTS:

The immediate massage therapy effects included reduced anxiety, depressed mood, and anger. The longer term massage effects included reduced depression and hostility and increased urinary dopamine, serotonin values, NK cell number, and lymphocytes.

CONCLUSIONS:

Women with Stage 1 and 2 breast cancer may benefit from thrice-weekly massage therapy for reducing depressed mood, anxiety, and anger and for enhancing dopamine, serotonin, and NK cell number and lymphocytes."

Hsiao PC, Liu JT, Lin CL, Chou W, Lu SR. 2015 **Risk of breast cancer recurrence in patients receiving manual lymphatic drainage: a hospital-based cohort study**. *Ther Clin Risk Manag* Feb 27;11:349-58 <http://www.ncbi.nlm.nih.gov/pubmed/25767390>

"This retrospective cohort study evaluated whether manual lymphatic drainage (MLD) therapy increases the risk of recurrence of breast cancer.

METHODS:

We analyzed 1,106 women who were diagnosed with stage 0-3 breast cancer between 2007 and 2011 and experienced remission after surgery and adjuvant therapy. The patients were divided into two groups: group A (n=996), in which patients did not participate in any MLD therapy, regardless of whether they developed breast cancer-related lymphedema (BCRL) after cancer treatment; and group B (n=110), in which patients participated in MLD therapy for BCRL. All patients were monitored until October 2013 to determine whether breast cancer recurrence developed, including local or regional recurrence and distant metastasis. Patients who developed cancer recurrence prior to MLD therapy were excluded from analysis. Risk factors associated with cancer recurrence were evaluated using Cox proportional hazards models.

RESULTS:

During the monitoring period, 166 patients (15.0%) developed cancer recurrence, including 154 (15.5%) in group A and 12 (10.9%) in group B. The median period from surgery to cancer recurrence was 1.85 (interquartile range 1.18-2.93) years. Independent risk factors for cancer recurrence were tumor histological grading of grade 3, high number (≥ 3) of axillary lymph node invasion, and a large tumor size (> 5 cm). Factors protecting against recurrence were positive progesterone receptor status and receiving radiation therapy. Receiving MLD therapy was not an outcome factor in multivariate analyses (hazard ratio 0.71, 95% confidence interval 0.39 -1.29, $P=0.259$).

CONCLUSION:

MLD is a gentle procedure that does not increase the risk of breast cancer recurrence in patients who develop BCRL."

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: 1

Leach J 2008 **Osteopathic support for a survivor of gastric cancer: A case report** International Journal of Osteopathic Medicine Volume 11, Issue 3, September , Pages 106–111 <http://www.sciencedirect.com/science/article/pii/S174606890800031X>

"An older male patient received eight consultations over a period of 10 months, some three years after his cancer diagnosis and treatment. Osteopathic management included manual treatment to improve musculoskeletal mobility, cranial osteopathic treatment to release tension in the deeper fascia, discussion of dietary strategies and advice and education about the origin of his symptoms due to a total gastrectomy and cancer chemotherapy. After treatment his physical symptoms were reduced. His neck pain was reduced. Nausea and discomfort after eating disappeared. Frequency of diarrhoea, breathlessness and fatigue were improved. He gained weight and resumed social activities. "

"Osteopathic consultations provide time to engage in complex problems that may benefit from a holistic approach. The touch and body work involved in osteopathy can help the patient come to terms with altered body image and to talk openly about anxieties. The Hay approach to diet appeared to be valuable in improving the quality of life for this particular patient after his gastrectomy."