

Collected Scientific Research Relating to the Use of Osteopathy with Older people

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.

In addition to these studies, there are a larger number of studies that deal with conditions that are more prevalent in older people: osteoarthritis, dementia, Parkinson's disease, poor balance, circulatory insufficiency (including altering cerebral blood flow), wound healing, diabetes (symptoms associated with), immune-system regulation and effectiveness, urinary tract symptoms, chronic obstructive pulmonary disease, pneumonia, depression, surgical recovery, osteoporosis (pain and disability associated with), hypertension (high blood pressure) and neurogenic claudication.

These studies are from peer-reviewed journals

Number of studies: 10

Clinically and statistically significant results

Number of studies: 7

Randomised controlled trials

Number of studies: 4

Noll DR, Degenhardt BF, Johnson JC 2016 **Multicenter Osteopathic Pneumonia Study in the Elderly: Subgroup Analysis on Hospital Length of Stay, Ventilator-Dependent Respiratory Failure Rate, and In-hospital Mortality Rate.** J Am Osteopath Assoc Sep 1;116(9):574-87 <http://jaoa.org/Issue.aspx#issueid=935682>

"Context: Osteopathic manipulative treatment (OMT) is a promising adjunctive treatment for older adults hospitalized for pneumonia.

Objective: To report subgroup analyses from the Multicenter Osteopathic Pneumonia Study in the Elderly (MOPSE) relating to hospital length of stay (LOS), ventilator-dependent respiratory failure rate, and in-hospital mortality rate.

Design: Multicenter randomized controlled trial. Setting: Seven community hospitals.

Participants: Three hundred eighty-seven patients aged 50 years or older who met specific criteria for pneumonia on hospital admission.

Interventions: Participants were randomly assigned to 1 of 3 groups that received an adjunctive OMT protocol (n=130), a light touch (LT) protocol (n=124), or conventional care only (CCO) (n=133).

Main Outcome Measures: Outcomes for subgroup analyses were LOS, ventilator-dependent respiratory failure rate, and in-hospital mortality rate. Subgroups were age (50-74 years or ≥75 years), Pneumonia Severity Index (PSI) class (I-II, III, IV, or V), and type of pneumonia (community-acquired or nursing-home acquired). Data were analyzed by intention-to-treat and per-protocol analyses using stratified Cox proportional hazards models and Cochran-Mantel-Haenszel tests for general association. Results: By per-protocol analysis of the younger age subgroup, LOS was shorter for the OMT group (median, 2.9 days; n=43) than the LT (median, 3.7 days; n=45) and CCO (median, 4.0 days; n=65) groups (P=.006). By intention-to-treat analysis of the older age subgroup, in-hospital mortality rates were lower for the OMT (1 of 66 [2%]) and LT (2 of 68 [3%]) groups than the CCO group (9 of 67 [13%]) (P=.005). By per-protocol analysis of the PSI class IV subgroup, the OMT group had a shorter LOS than the CCO group (median, 3.8 days [n=40] vs 5.0 days [n=50]; P=.01) and a lower ventilator-dependent respiratory failure rate than the CCO group (0 of 40 [0%] vs 5 of 50 [10%]; P=.05). By intention-to-treat analysis, in-hospital mortality rates in the PSI class V subgroup were lower (P=.05) for the OMT group (1 of 22 [5%]) than the CCO group (6 of 19 [32%]) but not the LT group (2 of 15 [13%]).

Conclusion: Subgroup analyses suggested adjunctive OMT for pneumonia reduced LOS in adults aged 50 to 74 years and lowered in-hospital mortality rates in adults aged 75 years or older. Adjunctive OMT may also reduce LOS and in-hospital mortality rates in older adults with more severe pneumonia. Interestingly, LT also reduced in-hospital mortality rates in adults aged 75 years or older relative to CCO. (ClinicalTrials.gov number NCT00258661)"

Snider KT, Snider EJ, Johnson JC, Hagan C, Schoenwald C. 2012 **Preventative osteopathic**

manipulative treatment and the elderly nursing home resident: a pilot study. J Am Osteopath Assoc Aug;112(8):489-501 <http://www.ncbi.nlm.nih.gov/pubmed/22904246>

"Volunteer nursing home residents were randomly assigned to 1 of 3 groups: (1) OMT, (2) light touch (LT), or (3) treatment as usual (TAU). The OMT group received an OMT protocol twice per month for 5 months, for a total of 10 visits. The LT group received a light-touch protocol meant to simulate OMT at the same frequency as the OMT group. "

"Twice monthly OMT and LT protocols reduced the number of hospitalizations and decreased medication usage in elderly nursing home residents."

Knebl JA, Shores JH, Gamber RG, Gray WT, Herron KM. 2002 **Improving functional ability in the elderly via the Spencer technique, an osteopathic manipulative treatment: a randomized, controlled trial.** J Am Osteopath Assoc Jul;102(7):387-96 <http://www.ncbi.nlm.nih.gov/pubmed/12138953>

"Twenty-nine elderly patients with preexisting shoulder problems voluntarily enrolled as subjects in this study, which was undertaken to determine the efficacy of osteopathic manipulative treatment (OMT) in an elderly population to increase functional independence, increase range of motion (ROM) of the shoulder, and decrease pain associated with common shoulder problems. Each subject had chronic pain, decreased ROM, and/or decreased functional ability in the shoulder before entering the study. Subjects were randomly assigned to either a treatment (OMT) group or a control group for 14 weeks. Over the course of treatment, both groups had significantly increased ROM ($P < .01$) and decreased perceived pain ($P < .01$). All subjects continued on their preexisting course of therapy for any concurrent medical problems. After treatment, those subjects who had received OMT demonstrated continued improvement in their ROM, while ROM in the placebo group decreased."

Noll DR, Shores JH, Gamber RG, Herron KM, Swift J Jr. 2000 **Benefits of osteopathic manipulative treatment for hospitalized elderly patients with pneumonia.** J Am Osteopath Assoc Dec;100(12):776-82 <http://www.ncbi.nlm.nih.gov/pubmed/11213665>

"While osteopathic manipulative treatment (OMT) is thought to be beneficial for patients with pneumonia, there have been few clinical trials--especially in the elderly. The authors' pilot study suggested that duration of intravenous antibiotic use and length of hospital stay were promising measures of outcome. Therefore, a larger randomized controlled study was conducted. Elderly patients hospitalized with acute pneumonia were recruited and randomly placed into two groups: 28 in the treatment group and 30 in the control group. The treatment group received a standardized OMT protocol, while the control group received a light touch protocol. There was no statistical difference between groups for age, sex, or simplified acute physiology scores. The treatment group had a significantly shorter duration of intravenous antibiotic treatment and a shorter hospital stay."

Other controlled clinical trials

Number of studies: 2

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."

Lopez D, King HH, Knebl JA, Kosmopoulos V, Collins D, Patterson RM. 2011 **Effects of comprehensive osteopathic manipulative treatment on balance in elderly patients: a pilot study.** *J Am Osteopath Assoc* Jun;111(6):382-8. <http://www.ncbi.nlm.nih.gov/pubmed/21771924>

"The OMT [osteopathic manipulative technique] protocol consisted of the following elements: Soft-tissue and myofascial release at T1 to L5 and sacral "rock" (patient prone) (3-4 minutes); myofascial release in the shoulders and scapulae bilaterally²⁶ (patient lateral recumbent) (4-5 minutes) Cervical spine myofascial, counterstrain, muscle energy, or soft-tissue techniques for release and correction (patient supine) (3-4 minutes); Occipitoatlantal and condylar decompression (1-2 minutes) Venous sinus technique (5-6 minutes) V-spread, frontal and parietal lifts, or both (2-3 minutes); CV4 technique²⁶ (3-4 minutes); Recheck for other key tender points (2-3 minutes) and treat according to findings"

"The OMT group had significantly reduced sway for the eyes-open test after 4 visits (P=.001)"

"The OMT protocol used in the present study improved the postural stability of healthy elderly patients, as measured by changes in sway values."

Case reports

Number of studies: 1

Pellerin F, Guihéneuc P, Guihard G, 2015 **Can osteopathic manipulative treatment modify the posture in elderly people? – A single-case study** *Journal of Bodywork and Movement Therapies* Volume 19, Issue 2, April , Pages 380–388 <http://www.sciencedirect.com/science/article/pii/S1360859214001235>

"The patient was a 77 years old woman complaining of altered balance and low-back pain. OMS [osteopathic manipulative sessions] were delivered by a single practitioner. The pain level was self-rated by using a visual Borg scale. The posture was monitored on a force platform. Postural parameters were deduced from the analysis of the centre of foot pressure (CoP) displacement. The statistical significance of the observed differences was established by using an SCR-related effect size indicator (i.e. Taunovlap). Our results indicate that OMS decrease the patient's pain, modify CoP mean position and decreased the length and velocity of the CoP displacement. Furthermore, modifications of the body oscillations were observed after OMS. This work indicates that OMS can improve body balance."

Mixed results (significant for some outcomes, not others)

Number
of studies:
3

Randomised controlled trials

Number of studies: 3

Noll DR. 2013 **The short-term effect of a lymphatic pump protocol on blood cell counts in nursing home residents with limited mobility: a pilot study.** J Am Osteopath Assoc Jul;113 (7):520-8 <http://www.ncbi.nlm.nih.gov/pubmed/23843375>

"CONTEXT:

Lymphatic pump techniques have the potential to alter blood cell counts and thus enhance immune function in elderly adults with diminished mobility.

OBJECTIVE:

To test whether an osteopathic manipulative treatment (OMT) protocol designed to enhance immune function will have an effect on lymphocyte and lymphocyte subset counts compared with a sham control group.

DESIGN:

The study design was a single-session, randomized, controlled clinical trial comparing a standardized lymphatic pump protocol with a light-touch protocol. Participants were assigned to 1 of 2 groups by using a 1:1 allocation ratio.

SETTING:

The study was conducted in 2 rural long-term care facilities in Missouri.

PARTICIPANTS:

Residents in the long-term care facilities who were aged 60 years or older and who were confined to a bed or wheelchair for most of their waking hours. Twenty residents were recruited to participate in the study, and 10 were randomly assigned to each group.

INTERVENTIONS:

Baseline blood samples were obtained. Then each patient received a 6-minute study protocol treatment. Thirty minutes after completion, posttreatment blood samples were obtained. The OMT protocol consisted of 3 osteopathic techniques: myofascial release to the thoracic inlet, the splenic pump, and the pedal lymphatic pump. The light touch protocol was applied to the same body areas as the OMT protocol for 6 minutes.

OUTCOME MEASURES:

A pretreatment and posttreatment lymphocyte subset panel, complete blood cell count, and automated white blood cell count differential was obtained from each participant.

RESULTS:

There was a statistically significant between-group difference in mean change for platelet counts: counts in the OMT group decreased by a mean (standard deviation) of 15,400 (7947) platelets per microliter and the light touch group increased by 4,700 (17,857) platelets per microliter ($P=.004$). The between-group differences for the mean (standard deviation) absolute lymphocyte cell count, red blood cell count, hemoglobin level, and hematocrit measures all decreased, but the changes were not statistically significant relative to the control group.

CONCLUSION:

The OMT protocol used in this pilot study modestly reduced platelet counts in nursing home residents with limited mobility."

Papa L, Mandara A, Bottali M, Gulisano V, Orfei S. 2012 **A randomized control trial on the effectiveness of osteopathic manipulative treatment in reducing pain and improving the quality of life in elderly patients affected by osteoporosis.** Clin Cases Miner Bone Metab Sep;9(3):179-83 <http://www.ncbi.nlm.nih.gov/pubmed>

"Introduction

In the elderly population, a decrease in bone mineral density (osteoporosis) is often associated with a decrease in quality of life and an increase in self reported body pain. This pain originates

from the musculoskeletal system and can potentially affect different areas of the body.

Aim

The aim of this study was to investigate the effect of osteopathic manipulative treatment (OMT) on self reported pain and quality of life in an elderly population.

Design

Randomized placebo controlled trial.

Methods

Patients were recruited from the Geriatric Department, Bassini Hospital (Milan, Italy). Patients were randomly assigned to either 6 sessions of OMT (n = 37 patients) or an equivalent number of sham manipulative treatment (SMT) (n = 35 patients). The main outcome variables were QOL measured by QUALEFFO -41 and overall bodily pain measured using a visual analog scale (VAS). Data were analyzed using a two factor ANOVA (treatment × time) for repeated measurements with an α level set at $p \leq 0.05$.

Results

Main result of this study was that OMT compared to SMT showed a significant decreased of disability. This effect was demonstrated by a significant interaction in the overall disability score ($p = 0.001$) and the Mental wellbeing ($p = 0.058$), Health perception ($p = 0.005$) and Pain ($p = 0.003$) QUALEFFO -41 subscales, while no significant difference (no interaction) for pain as measured by VAS and for the Daily activities, Walking, Household cleaning and Leisure time activities QUALEFFO -41 subscales ($p > 0.05$) was found. No adverse effects were recorded during the study.

Discussion

This study demonstrated that, in a group of elderly subjects affected by osteoporosis OMT was able to increase self reported QOL while the effect on body pain perception is unclear. This overall improvement in QOL appears to be caused by an improvement in psychological factors (i.e Mental wellbeing and Health perception) rather than physical factors. In fact, all QUALEFFO -41 subscales related to physical function demonstrated no significant interaction. The effect of OMT on Pain perception is less clear. In fact, there was no effect on pain as assessed by VAS while a significant improvement was observed when the QUALEFFO -41 subscale was used. This could be due to the metric properties of the two pain measurement methods; an alternative explanation could be that VAS measures mainly pain quantity while QUA-LEFFO -41 subscales measures mainly pain quality. The lack of effect of OMT on physical function needs to be confirmed by more direct measurements of this variable."

Noll DR, Shores J, Bryman PN, Masterson EV. 1999 **Adjunctive osteopathic manipulative treatment in the elderly hospitalized with pneumonia: a pilot study.** J Am Osteopath Assoc Mar;99(3):143-6, 151-2 <http://www.ncbi.nlm.nih.gov/pubmed/10217908>

"To evaluate the benefit of osteopathic manipulative treatment in the elderly with pneumonia, the authors recruited 21 individuals older than 60 years who were hospitalized with acute pneumonia. Eleven patients were randomly assigned to the treatment group and ten to the control group. The treatment group received specific osteopathic manipulative treatment for somatic dysfunction and a standardized treatment protocol. Both groups received conventional therapy, and the attending physician was blind to group assignments. No significant difference existed between groups for age, sex, or severity of illness. Although the mean duration of leukocytosis, intravenous antibiotic treatment, and length of stay were shorter for the treatment group, these measures did not reach statistical significance. However, the mean duration of oral antibiotic use did reach statistical significance at 3.1 days for the treatment group and 0.8 day for the control group. Osteopathic manipulative treatment may reduce antibiotic use and length of stay; however, a larger study is needed to clarify this outcome."