

# Collected Scientific Research Relating to the Use of Osteopathy with High blood pressure (hypertension)

## 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: 4

## Clinically and statistically significant results

Number of studies: 4

## Systematic reviews

Number of studies: 1

Galindez-Ibarbengoetxea X, Setuain I, Andersen LL, Ramírez-Velez R, González-Izal M, Jauregi A, Izquierdo M 2017 **Effects of Cervical High-Velocity Low-Amplitude Techniques on Range of Motion, Strength Performance, and Cardiovascular Outcomes: A Review.** *J Altern Complement Med* Sep;23(9):667-675 <https://www.ncbi.nlm.nih.gov/pubmed/28731832>

### "BACKGROUND:

Cervical high-velocity low-amplitude (HVLA) manipulation technique is among the oldest and most frequently used chiropractic manual therapy, but the physiologic and biomechanics effects were not completely clear.

### OBJECTIVE:

This review aims to describe the effects of cervical HVLA manipulation techniques on range of motion, strength, and cardiovascular performance.

### METHODS/DESIGN:

A systematic search was conducted of the electronic databases from January 2000 to August 2016: PubMed (n = 131), ScienceDirect (n = 101), Scopus (n = 991), PEDro (n = 33), CINAHL (n = 884), and SciELO (n = 5). Two independent reviewers conducted the screening process to determine article eligibility. The intervention that included randomized controlled trials was thrust, or HVLA, manipulative therapy directed to the cervical spine. Methodological quality was assessed using the Cochrane risk-of-bias tool. The initial search rendered 2145 articles. After screening titles and abstracts, 11 articles remained for full-text review.

### RESULTS:

The review shows that cervical HVLA manipulation treatment results in a large effect size ( $d > 0.80$ ) on increasing cervical range of motion and mouth opening. In patients with lateral epicondylalgia, cervical HVLA manipulation resulted in increased pain-free handgrip strength, with large effect sizes (1.44 and 0.78, respectively). Finally, in subjects with hypertension the blood pressure seemed to decrease after cervical HVLA manipulation. Higher quality studies are needed to develop a stronger evidence-based foundation for HVLA manipulation techniques as a treatment for cervical conditions."

Delaney JP, Leong KS, Watkins A, Brodie D 2002 **The short-term effects of myofascial trigger point massage therapy on cardiac autonomic tone in healthy subjects.** J Adv Nurs Feb;37 (4):364-71 <https://www.ncbi.nlm.nih.gov/pubmed/11872106?dopt=Abstract>

**"AIM OF THE STUDY:**

To investigate the effects of myofascial trigger-point massage therapy to the head, neck and shoulder areas on cardiac autonomic tone. Background. No studies have reported on the effect of back massage on autonomic tone as measured by heart rate variability. This is especially relevant to the nursing profession, as massage is increasingly available as a therapy complementary to conventional nursing practice.

**DESIGN/METHODS:**

An experimental study in which subjects were initially placed in age- and sex-matched groups and then randomized to treatment or control by alternate allocation. The study involved 30 healthy subjects (16 female and 14 male, aged 32.47 +/- 1.55 years, mean +/- standard error). A 5-minute cardiac interbeat interval recording, systolic and diastolic blood pressure and subjective self-evaluations of muscle tension and emotional state were taken before and after intervention. Autonomic function was measured using time and frequency domain analysis of heart rate variability.

**RESULTS:**

Following myofascial trigger-point massage therapy there was a significant decrease in heart rate ( $P < 0.01$ ), systolic blood pressure ( $P=0.02$ ) and diastolic blood pressure ( $P < 0.01$ ). Analysis of heart rate variability revealed a significant increase in parasympathetic activity ( $P < 0.01$ ) following myofascial trigger-point massage therapy. Additionally both muscle tension and emotional state, showed significant improvement ( $P < 0.01$ ).

**CONCLUSIONS:**

In normal healthy subjects myofascial trigger-point massage therapy to the head, neck and shoulder areas is effective in increasing cardiac parasympathetic activity and improving measures of relaxation."

Welch A, Boone R 2008 **Sympathetic and parasympathetic responses to specific diversified adjustments to chiropractic vertebral subluxations of the cervical and thoracic spine.** J Chiropr Med Sep;7(3):86-93 <http://www.ncbi.nlm.nih.gov/pubmed>

**"OBJECTIVE:**

The aims of this study were to investigate the response of the autonomic nervous system based upon the area of the spine adjusted and to determine if a cervical adjustment elicits a parasympathetic response and if a thoracic adjustment elicits a sympathetic response.

**METHODS:**

Forty patients (25-55 years old) met inclusion criteria that consisted of normal blood pressure, no history of heart disease, and being asymptomatic. Patients were evaluated pre- and post-chiropractic adjustment for the following autonomic responses: blood pressure and pulse rate. Seven patients were measured for heart rate variability. The subjects received either a diversified cervical segment adjustment or a diversified thoracic segment adjustment.

**RESULTS:**

Diastolic pressure (indicating a sympathetic response) dropped significantly postadjustment among those receiving cervical adjustments, accompanied by a moderate clinical effect (0.50). Pulse pressure increased significantly among those receiving cervical adjustments, accompanied by a large effect size (0.82). Although the decrease in pulse pressure for those receiving thoracic adjustments was not statistically significant, the decrease was accompanied by a moderate effect size (0.66).

**CONCLUSION:**

It is preliminarily suggested that cervical adjustments may result in parasympathetic responses, whereas thoracic adjustments result in sympathetic responses. Furthermore, it appears that these responses may demonstrate the relationship of autonomic responses in association to the particular segment(s) adjusted."

Cerritelli F, Carinci F, Pizzolorusso G, Turi P, Renzetti C, Pizzolorusso F, Orlando F, Cozzolino V, Barlafante G 2011 **Osteopathic manipulation as a complementary treatment for the prevention of cardiac complications: 12-Months follow-up of intima media and blood pressure on a cohort affected by hypertension.** *Journal of Bodywork and Movement Therapies* Jan;15(1):68-74 [http://www.bodyworkmovementtherapies.com/article/S1360-8592\(10\)00046-X/references](http://www.bodyworkmovementtherapies.com/article/S1360-8592(10)00046-X/references)

**This was a time-series study. At the same time, this is a condition who's natural history would not normally involve spontaneous improvement, and so therefore it should not be trusted on its own without repetition with a control group.**

## "Background

Aim of the present study was to investigate the association between osteopathic treatment and hypertension.

## Methods

The design was a non-randomized trial including consecutive subjects affected by hypertension and vascular alterations, using pre–post differences in intima-media thickness, systolic and diastolic blood pressure as primary endpoints. Statistical analysis was based on univariate t tests and multivariate linear regression.

## Results

A total of N = 31 out of N = 63 eligible subjects followed by a single cardiologist received osteopathic treatment in addition to routine care. Clinical measurements were recorded at baseline and after 12 months.

Univariate analysis found that osteopathic treatment was significantly associated to an improvement in all primary endpoints. Multivariate linear regression showed that, after adjusting for all potential confounders, osteopathic treatment was performing significantly better for intima-media thickness (delta between pre–post differences in treated and control groups:  $-0.517$ ; 95% c.i.:  $-0.680$ ,  $-0.353$ ) and systolic blood pressure ( $-4.523$ ;  $-6.291$ ,  $-2.755$ ), but not for diastolic blood pressure.

## Conclusion

Our study shows that, among patients affected by cardiovascular disorders, osteopathic treatment is significantly associated to an improvement in intima-media and systolic blood pressure after one year. Multicentric randomized trials of adequate sample size are needed to evaluate the efficacy of OMT in the treatment of hypertension."