

# Collected Scientific Research Relating to the Use of Osteopathy with Pre-term babies

## 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: 6

## Clinically and statistically significant results

Number of studies: 6

### Systematic reviews

Number of studies: 1

Lanaro D, Ruffini N, Manzotti A, Lista G 2017 **Osteopathic manipulative treatment showed reduction of length of stay and costs in preterm infants: A systematic review and meta-analysis.** *Medicine (Baltimore)* Mar;96(12):e6408 [http://journals.lww.com/md-journal/Fulltext/2017/03240/Osteopathic\\_manipulative\\_treatment\\_showed.43.aspx](http://journals.lww.com/md-journal/Fulltext/2017/03240/Osteopathic_manipulative_treatment_showed.43.aspx)

"Background: Osteopathic medicine is an emerging and complementary method used in neonatology.

Methods: Outcomes were the mean difference in length of stay (LOS) and costs between osteopathy and alternative treatment group. A comprehensive literature search of (quasi)-randomized controlled trials (RCTs), was conducted from journal inception to May, 2015.

Eligible studies must have treated preterm infants directly in the crib or bed and Osteopathic Manipulative Treatment (OMT) must have been performed by osteopaths. A rigorous Cochrane-like method was used for study screening and selection, risk of bias assessment and data reporting. Fixed effect meta-analysis was performed to synthesize data.

Results: 5 trials enrolling 1306 infants met our inclusion criteria. Although the heterogeneity was moderate ( $I^2=61\%$ ,  $P=0.03$ ), meta-analysis of all five studies showed that preterm infants treated with OMT had a significant reduction of LOS by 2.71 days (95% CI  $-3.99$ ,  $-1.43$ ;  $P<0.001$ ). Considering costs, meta-analysis showed reduction in the OMT group ( $-1,545.66\text{€}$ ,  $-1,888.03\text{€}$ ,  $-1,203.29\text{€}$ ,  $P<0.0001$ ). All studies reported no adverse events associated to OMT.

Subgroup analysis showed that the benefit of OMT is inversely associated to gestational age.

Conclusions: The present systematic review showed the clinical effectiveness of OMT on the reduction of LOS and costs in a large population of preterm infants."

Pizzolorusso G, Cerritelli F, Accorsi A, Lucci C, Tubaldi L, Lancellotti J, Barlafante G, Renzetti C, D'Incecco C, Perri FP 2014 **The Effect of Optimally Timed Osteopathic Manipulative Treatment on Length of Hospital Stay in Moderate and Late Preterm Infants: Results from a RCT.** Journal of Evidence-Based Complementary & Alternative Medicine 2014:243539 <http://www.ncbi.nlm.nih.gov/pubmed/25506381>

"Little research has been conducted looking at the effects of osteopathic manipulative treatment (OMT) on preterm infants. Aim of the Study. This study hypothesized that osteopathic care is effective in reducing length of hospital stay and that early OMT produces the most pronounced benefit, compared to moderately early and late OMT. A secondary outcome was to estimate hospital cost savings by the use of OMT. Methods. 110 newborns ranging from 32- to 37-week gestation were randomized to receive either OMT or usual pediatric care. Early, moderately early, and late OMT were defined as <4, <9, and <14 days from birth, respectively. Result. Hospital stay was shorter in infants receiving late OMT (-2.03; 95% CI -3.15, -0.91; P < 0.01) than controls. Subgroup analysis of infants receiving early and moderately early OMT resulted in shorter LOS (early OMT: -4.16; -6.05, -2.27; P < 0.001; moderately early OMT: -3.12; -4.36, -1.89; P < 0.001). Costs analysis showed that OMT significantly produced a net saving of €740 (-1309.54, -170.33; P = 0.01) per newborn per LOS. Conclusions. This study shows evidence that the sooner OMT is provided, the shorter their hospital stay is. There is also a positive association of OMT with overall reduction in cost of care."

Cerritelli F, Pizzolorusso G, Ciardelli F, La Mola E, Cozzolino V, Renzetti C, D'Incecco C, Fusilli P, Sabatino G, Barlafante G 2013 **Effect of osteopathic manipulative treatment on length of stay in a population of preterm infants: a randomized controlled trial.** BMC Pediatr Apr 26;13:65 <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3648440/>

"The term osteopathic manipulative treatment (OMT) currently encompasses more than twenty types of osteopath-performed manual treatments. The OMT techniques of choice in treating preterm infants are myofascial release, balanced ligamentous/membranous tension, indirect fluidic and v-spread."

"In the present study, 8 osteopathic practitioners were involved and randomly divided in two groups: 4 osteopaths performing the evaluation (group A), and 4 osteopaths performing the evaluation and the treatment (group B). Osteopaths from group A and B entered to the NICU in different hours of the schedule days, to provide blinding and to avoid possible confounding. None of the osteopathic practitioners were involved in the study design, data entry or statistical analysis. In addition all practitioners, except for the treating osteopath, were unaware of patients allocation."

"Results showed a significant association between OMT [osteopathic manipulative therapy] and LOS [length of stay] reduction (mean difference between treated and control group: -5.906; 95% C.I. -7.944, -3.869; p<0.001). OMT was not associated to any change in daily weight gain."

"The present study suggests that OMT may have an important role in the management of preterm infants hospitalization."

Cerritelli F, Pizzolorusso G, Ciardelli F, Mola EL, Renzetti C, Cozzolino V, Barlafante G 2012 **Neonatology-Osteopathy (Ne-O) Study: RCT on the Effect of Osteopathic Manipulative Treatment on Length of Stay** BMC Complement Altern Med 12(Suppl 1): O36 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3373670/>

"Background and Aims The use of osteopathic manipulative treatment (OMT) in preterm infants has been documented and results from previous studies suggest the association between OMT and length of stay (LOS) reduction, as well as significant improvement in several clinical outcomes. The aim of the present study is to show the effect of OMT on LOS in a sample of premature infants."

Methods A double blinded randomized controlled trial was conducted on preterm newborns admitted in a single NICU between 2010–2011. N=51 subjects free of medical complications and with gestational age >28 and < 38 weeks were enrolled and randomized in two groups: study group (N=21) and control group (N=30). All subjects received routine pediatric care and OMT was performed to the study group for the entire period of hospitalization. Endpoints of the study included differences in LOS and daily weight gain.

Results Results showed a significant association between OMT and LOS reduction (mean difference between treated and control group: -1.787; 95% c.i. -3.555, -0.0015; p<0.05). OMT was not associated to any change in daily weight gain.

Conclusions The present study confirms that OMT could play an important role in the management of preterm infants hospitalization."

## Other controlled clinical trials

Number of studies: 1

Pizzolorusso G, Turi P, Barlafante G, Cerritelli F, Renzetti C, Cozzolino V, D'Orazio M, Fusilli P, Carcini F, D'Incecco C 2011 **Effect of osteopathic manipulative treatment on gastrointestinal function and length of stay of preterm infants: an exploratory study** *Chiropractic and Manual Therapies* 19:15 <https://www.ncbi.nlm.nih.gov/pubmed/21711535>

"Osteopaths performing OMT [osteopathic manipulative treatment] were trained to use only indirect and fluidic techniques which included: indirect myofascial, sutural spread, balanced membranous tension and balanced ligamentous tension (according to teachings of William Garner Sutherland, DO, and others)."

"The study suggests that osteopathic treatment may reduce a high occurrence of gastrointestinal symptoms and the rates of long-term stays."

## Case reports

Number of studies: 1

Lund GC, Edwards G, Medlin B, Keller D, Beck B, Carreiro JE. 2011 **Osteopathic manipulative treatment for the treatment of hospitalized premature infants with nipple feeding dysfunction.** *J Am Osteopath Assoc* Jan;111(1):44-8 <http://www.ncbi.nlm.nih.gov/pubmed/21258016>

"Premature newborns and infants are usually required to successfully transition from gavage to nipple feeding using breast or bottle before discharge from the hospital. This transition is frequently the last discharge skill attained. Delayed acquisition of this skill may substantially prolong hospital length of stay. The authors describe a case of hospitalized premature twins who had considerable delays in attaining nipple-feeding skills. Because of their inability to take all feedings by nipple, preparation for surgical placement of gastrostomy tubes was initiated. Before the surgeries were scheduled, the inpatient osteopathic manipulative medicine service was consulted, and the twins received a series of evaluations and osteopathic manipulative treatment (OMT) sessions. During the OMT course, the twins' nipple feeding skills progressed to full oral feeding, which allowed them to be discharged to home without placement of gastrostomy tubes. The authors also review the literature and discuss the development of nipple feeding in premature newborns and infants and the use of OMT in the management of nipple feeding dysfunction."