

Osteopathic Manipulative Therapy for the Pregnant Patient

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Introduction

The overall objective in Osteopathy is to find and restore balance to the body. It is an approach that strives to work with the body's physical structure in an attempt to optimize physiological functioning. The study of Osteopathy views the body as a whole, a total sum of its parts, and works to maintain overall balance by treating any stressors placed upon it.¹ For these reasons, as well as the ones that will be discussed throughout the following text, Osteopathy should be an obvious and natural path of treatment during the female body's biggest, and most dramatic, stage of change.

Manual osteopathic treatment throughout one's pregnancy can help the female body to readjust to the many changes it goes through, and can be very useful in treating the numerous side effects that are suffered by expectant mothers. These include, but are not limited to, nausea, back pain, numbness, low energy, loss of mobility, loss of sleep, and general discomfort.² Continued treatment throughout the course of pregnancy can promote a more pleasant overall experience, as well as potentially lessen the strain and duration of childbirth itself. More specifically, osteopathic treatment can help relieve the aches and pains of pregnancy by eliminating somatic dysfunction and maintaining proper

¹ Lavelle, J.M. (2012). "Osteopathic Treatment in Pregnant Women." *J Am Osteopath Assoc*, 112 (June), 343-346.

² Elke, H. (2007). "Effects of Osteopathic Work to Mother and Child Regarding Foetal Heart Rate, Uterine contractions, Lumbosacral Mobility, and Objective Parameters of Delivery." *Osteopathic Research Web*.

structure.³ Furthermore, follow up osteopathic treatment postnatally can aid in the mothers recovery and help return the body to homeostasis.⁴

An Overview of Osteopathy & Pregnancy

Developed by Dr. Andrew Taylor Still in the late 1800s, Osteopathy is a type of non-invasive manual medicine that focuses on total body health by treating and strengthening the body as a whole. Specifically, osteopathy works on improving the strength and balance of the musculoskeletal framework, which includes the joints, muscles, bones and fascia. The goal of treatment is to provide and maintain overall good health and wellbeing. The “hands on” techniques employed during osteopathic treatment improve the body’s circulation and seek to correct imbalances in biomechanics. The objective of treatment is often focused on reducing stress, minimizing pain, and increasing mobility to allow for improved and more balanced functioning.⁵

Pregnancy and childbirth bring forth natural and beautiful changes in the female body. These changes can often be very taxing on the body’s systems, and frequently result in numerous accompanying negative symptoms. Because the body’s structure and function are intertwined and interrelated, as structural changes occur during pregnancy, as well as postpartum, the body must make appropriate adjustments to its functioning in

³ Hart, LM. (1918). “Obstetrical Practice.” *J Am Osteopath Assoc.* 609-614

⁴ Johnson, C. (2013). “Back to Back: Postnatal Osteopathic Care.” *The Practicing Midwife.* May:26-27. Print.

⁵ Buchanan, S., Fuld, K.G., Hensel, K.L., King, H.H., Licciardone, J.C., Stoll, S.T. (2010). “Osteopathic manipulative treatment of back pain and related symptoms during pregnancy: a randomized controlled trial.” *Am J Obstet Gynecol.* 202(1):43

order to maintain a proper balance.⁶ Osteopathic treatment during this life stage aims to assist the natural process of pregnancy and childbirth by aiding the body in adjusting and adapting to the naturally occurring changes as the pregnancy progresses with minimal pain and discomfort.⁷

Osteopathy During Pregnancy

Throughout the course of pregnancy, the mother's body is subject to numerous structural changes in order to accommodate the growing life inside of them. In turn, these changes can have negative effects on the overall quality of life of the expectant mother, and greatly interfere with their daily ability to function comfortably and optimally.⁶ These changes range from physical to physiological, with some being very obvious, to others being small and subtle. While necessary to the growth and support of a new life, these natural changes can bring about many symptoms that can be problematic and uncomfortable for the expectant mother. As touched on previously, these include, but are not limited to, nausea, back pain, loss of sleep, numbness, loss of mobility, and exhaustion.⁸ Because Osteopathy views the body as a unit, and sees the numerous body systems as being interrelated, it is the perfect type of treatment to deal with something that affects every system of the body as well as the body as a whole.⁹ Furthermore, the gentle hands on techniques used by manual osteopaths are non aggressive and will not cause any pain to the expectant mother and are considered to be safe for the growing

⁶ Lavelle, J.M. (2012). "Osteopathic Treatment in Pregnant Women." *J Am Osteopath Assoc*, 112 (June), 343-346.

⁷ Kuchera M, Kuchera W. (1994). "Osteopathic Considerations in Systemic Dysfunction." 2nd ed. Dayton OH: Graydon; 152-160

⁸ Eike, H. (2007). "Effects of Osteopathic Work to Mother and Child Regarding Faetal Heart Rate, Uterine Contractions, Lumbosacral Mobility, and Objective Parameters of Delivery." *Osteopathic Research Web*.

⁹ *Medical News Today*. MediLexicon International Ltd, 2003.

fetus. Osteopaths work to improve mobility and the structural stability of the body, two things that tend to be thrown off during pregnancy as the body struggles to adjust to weight gain and dramatic physical changes.¹⁰

The use of Osteopathic Manipulative Treatment (OMT) throughout pregnancy has been postulated to improve overall homeostasis and promote an enriched quality of life as the female body goes through the intense and drastic transformations associated with hormonal and structural shifts.¹¹ Pregnancy brings on a host of hemodynamic changes. More specifically, these changes include an increase in cardiac output, water and sodium retention, blood volume expansion, and vascular resistance.¹² Through the use of OMT, it is possible that the effects of some of these changes on the pregnant patient can be lessened. For example, OMT of the cervical and thoracic spine can help to regulate cardiac output and lesson the demands being placed on the heart.¹² It is proposed that with the use of OMT the pain associated with pregnancy can be lessened through the elimination of somatic dysfunction as well as the maintenance of proper musculoskeletal structure.¹³ Furthermore, there is evidence that OMT can help to decrease overall labor time and avoid possible complications of the birthing process.¹⁰

In more general terms, Osteopathic Manipulative Therapy can be viewed as a treatment for somatic dysfunction, which is perceived as impaired functioning of the body systems. In daily practice, it is used to treat a variety of conditions. Any problem

¹⁰ Lavelle, J.M. (2012). "Osteopathic Treatment in Pregnant Women." *J Am Osteopath Assoc*, 112 (June), 343-346.

¹¹ Elke, H. (2007) "Effects of Osteopathic Work to Mother and Child Regarding Foetal Heart Rate, Uterine Contractions, Lumbosacral Mobility, and Objective Parameters of Delivery." *Osteopathic Research Web*.

¹² Glonek, T., Nelson, K.E. (2006). "Somatic Dysfunction in Osteopathic Family Medicine." 108-113

¹³ Randal, S. (2014). "Osteopathy: Helping Pregnant Women in Pain. *The Practising Midwife*." 17.5:38-41. Print

that throws off the proper functioning of the human system can potentially cause an imbalance, and in turn set off a host of other problems in a “domino effect”. This notion can easily be applied to the care of an expectant mother, since pregnancy sends the female body through a rollercoaster of structural changes in order to accommodate the new life growing within.

A main principle of Osteopathy is that the body is a unit that is “self-regulating, self-healing, and self-maintaining”. The body’s structure is reciprocally interrelated to its functioning. Therefore, as the structure of the female body changes in order to accommodate new life within, it may need help to appropriately adjust its functioning.¹⁴

Osteopathic treatment of the pregnant patient is based on three things¹⁵:

1. Even the healthiest of pregnancies bring forth mechanical, biological, and physiological stressors
2. The human body is a self-regulating machine that if permitted to work efficiently can compensate for most stressor placed upon it
3. OMT is rooted in the notion that structure and function are both interdependent, as well as reciprocally interrelated, with optimum homeostasis

For increased benefit, it is ideal that the expectant mother is followed by a manual osteopath from early pregnancy through to the postpartum stage.¹⁶ At the beginning stages of pregnancy, OMT’s can start by identifying which areas (if any) are experiencing somatic dysfunction and preventative care can be performed. As the pregnancy advances,

¹⁴ “Tenets of Osteopathic Medicine.” American Osteopathic Association Web Site.

¹⁵ Kuchera M, Kuchera W. (1994). “Osteopathic Considerations in Systemic Dysfunction.” 2nd ed. Dayton, OH: Greyden Press LCC; 152-160.

¹⁶ “Osteopathy and Pregnancy.” (2012). Osteopathy Care. Web.

the increased weight gain and increased hormone levels put pressure on the muscles and ligaments, weakening their general strength. Overall, the goal is to utilize OMT techniques to improve visceral and somatic dysfunction, which in turn leads to improved mental status of the patient and more energy for fetal growth.¹⁷

Osteopathy to Treat Back Pain during Pregnancy

Research has shown that during pregnancy 50 to 80% of women experience back pain. Unfortunately, it would appear that there is no one simple cause, or cure, but that an accumulation of many factors are at fault, and that these differ greatly from person to person. These include maternal weight gain, shifts in hormone levels, change in the patient's center of gravity, spinal curve adjustments, etc. In several cases, back pain disappears after childbirth but it can also linger postnatally making the adjustment to motherhood difficult.¹⁸ Disappointingly, there seems to be a major lack of randomized controlled trials, and research in general, displaying the efficacy of Osteopathic Manipulative Therapy for the treatment of low back pain during, and following, pregnancy. However, the studies that have been done display very encouraging results. In the following section I will briefly bring some of these studies to light in an effort to both show the potential of OMT as a treatment for low back pain during pregnancy, but also to promote further research on this topic.

¹⁷ Kuchera M, Kuchera W. (1994). "Osteopathic Considerations in Systemic Dysfunction." 2nd ed. Dayton, OH: Greyden Press LCC; 152-160.

¹⁸ Aldercreutz, N. (2012). "Osteopathic Manipulative Treatment for Back Pain on Pregnant Patients: A Narrative Review." *Osteopathic Research Web*.

In order to study OMT on low back pain during the third trimester of pregnancy a randomized placebo controlled trial was launched by the Osteopathic Research Center at the University of North Texas in 2003. This study was performed by Buchanan et al, and was published in the *American Journal of Obstetrics and Gynecology* in 2010. There were 144 subjects, all pregnant women in their third trimester. These subjects were randomly divided in to 3 categories: usual obstetric care (UOBC) and OMT, UOBC and sham ultrasound treatment (SUT), and UOBC only. The overall goal was to see which combination would lead to a reduction in back pain. The end results were measured using average pain levels and the Roland Morris Disability Questionnaire (RMDQ). Results of the study showed that while disability and pain worsened in all 3 categories as pregnancy progressed, there was significantly less back-specific deterioration for those that had received the combination of UOBC and OMT in comparison to the two other groups. Researchers of this study concluded that OMT treatment can and should be used to slow, or altogether stop, the deterioration of back function in the third trimester of pregnancy.¹⁹

In one randomized controlled trial study, conducted by an Osteopath in Germany, 41 women were divided in to 2 groups to study the success of OMT on low back pain during pregnancy. The intervention group received 4 tailored osteopathic treatments in 2-week intervals while the control group received treatment only after an 8-week period before which they were not treated at all. Data collected included pain intensity (VAS), pain frequency (Likert scale), and disability during daily activities (Roland Morris Questionnaire). A follow- up after delivery was conducted. The results of this particular

¹⁹ Buchanan et al. (2010). "Osteopathic manipulative treatment of back pain and related symptoms during pregnancy: a randomized controlled trial." *Am J Obstet Gynecol*. 202(1):43.

study showed statistically significant improvement in the intervention group, supporting the claim that OMT is a successful treatment for low back pain during pregnancy.²⁰

Similar positive results were found in a non-randomized prospective clinical case study with a subject pool of 24 pregnant women experiencing low back pain. Divided evenly in to an intervention group and a control group, these women were followed for a period of 8 weeks. During this time, the 12 females in the intervention group were subject to 3 osteopathy treatments each, while those in the control group continued on with whatever previous treatment they were having prior to the study. Questionnaires measured pain intensity (Visual Analogue Scale) and physical disability (Roland Morris Questionnaire). While this study does have many limitations due to its methods, the results did show a positive correlation between OMT treatment and relief of low back pain.²¹

These types of studies, and the positive results that are drawn from them, are not new. Therefore, it comes as a surprise that more progress has not been made. For example, in 1982, Guthrie and Martin performed a placebo-controlled study involving 500 pregnant women. This study compared OMT to the lumbar region with a sham treatment to see if OMT was useful in decreasing low back pain during labor. The results of this study showed a decrease in low back pain for those that had received the OMT in comparison to those that had the sham treatment. This also led to a decrease need for

²⁰ Gundermann, S. (2013). "Effectiveness of Osteopathic Treatment in Pregnant Women Suffering from Low Back Pain (LBP). A randomized controlled trial." *Osteopathic Research Web*.

²¹ Kofler, G. (2008). "Osteopathy for Back-and Pelvic Pain in Pregnancy." *Osteopathic Research Web*.

narcotic pain medication.²² Unfortunately, more than 30 years later, we are still lacking evidence-based proof (via more research and more controlled studies) to back up the claims that OMT is an essential mode of treatment for low back pain in pregnancy.

Osteopathy and Childbirth

Above and beyond the previously displayed evidence of the usefulness of Osteopathic Manipulative Therapy as a treatment for the relief of pregnancy associated symptoms, there is some evidence that shows that OMT throughout pregnancy may actually help to shorten overall labor time.²³ One theory states that OMT to the lumbar vertebrae can in turn affect the pelvic viscera causing a reduction in labor time.²⁴ An example of such study was performed in 1911 by Whiting. Using a study involving 223 expectant mothers the time it took to deliver a baby (labor time) between those who received OMT and those who did not was compared. Whiting found that for first time pregnant women (primiparous females) who had received OMT the average labor time was much less, with an average of 9 hours and 54 minutes, in comparison to those that did not, and had an average labor time of 21 hours and 6 minutes. The same type of results remained true for the multiparous subjects.²⁵

Hart found comparable results in 1918 in a study of 100 pregnant women. He discovered that women that had received OMT to the lumbar vertebrae experienced shorter labor time than those that did not. For the primiparous subjects that had received OMT versus those that had not, the average labor time was 9 hours and 20 minutes, and

²² Guthrie, R.A. et al. (1982). "Effect of pressure applied to the upper thoracic (placebo) versus lombar areas (osteopathic manipulative treatment) for inhibition of lumbar myalgia during labor." *J Am Osteopath Assoc.* 82 (4):247-251.

²³ Johnson, C. (2013). "Back to back: Postnatal Osteopathic Care." *The practicing Midwife.* May:26-27. Print.

²⁴ Whiting, L.M. (1911). "Can the length of labor be shortened by osteopathic treatment?" *J Am Osteopath Assoc.* 11:917-921.

15 hours respectively. This again remained true for multiparous women with average labor times of 5 hours for those that had received OMT, to 9 hours for those that did not.²⁵

While these are only a couple of examples, with small sample sizes and the risk of being labeled “out of date”, they do suggest that through using viscerosomatic feedback through lumbar spine manipulation uterine contractions could possibly be induced.²⁶

Yet another illustration of the efficacy of OMT during pregnancy is seen in a retrospective case control study that compared the randomly selected medical records of a group of women who had received prenatal OMT with those of a group who had not. In total, 161 women were looked at. After comparing the occurrence of preterm delivery, use of forceps, and cesarean delivery, the study concluded that there is evidence of improved outcomes, in both labor and delivery, for women that received prenatal OMT in comparison to those that did not. This in turn led to the hypothesis that prenatal OMT may decrease the occurrence of complications seen throughout pregnancy, labor, and delivery. In summary of this data, it would appear that the use of OMT in prenatal care has positive health outcomes.²⁶

More recently (Elke, H. 2007), a study was published that found that MyoFascial Release Techniques used in late pregnancy can be beneficial to both the mother and unborn child. This study had a subject pool of 60 pregnant women, all past their 36th week of pregnancy. Half of the subjects were treated with MyoFascial Release

²⁵ Hart, L.M. (1918). “Obstetrical Practice.” *J Am Osteopath Assoc.* 609-614.

²⁶ Arsenault, D.A. et al. (2003). *J Am Osteopath Assoc.* 103:577-582.

Techniques of the lumbar sacral region, while the control group continued with their regular routines and underwent no extra treatment. Lumbosacral mobility was measured using the Diamond test and a CTG was performed to measure the fetal heart rate for all subjects at the beginning of the study and then again after the subjects had given birth. After analysis and comparison of results, it was found that lumbar sacral mobility improved greatly in the subjects that had undergone OMT in comparison to the control group. Another interesting result was that the CTG measurements showed that basal heart rate of the unborn fetus decreased a significant amount (while staying in a healthy range) during the application of Myofascial Release technique. This could be proof that this technique is beneficial in relaxing the unborn child.²⁷

Osteopathy Postnatally

Postpartum, the female body has a great deal to recover from. Furthermore, settling in to a new routine and caring for another life is an added adjustment that places further strain on the mothers body. With the help of OMT post birth the mother can comfortably settle in to her new life routine with minimal added stress to her body.²⁸ More specifically, visiting an Osteopath after childbirth can help the new mother to more rapidly and safely regain her strength and flexibility as well as eliminate any remaining strain that may be placed on the musculoskeletal system.²⁹

²⁷ Elke, H. (2007). "Effects of Osteopathic Work to Mother and Child Regarding Faetal Heart Rate, Uterine Contractions, Lumbosacral Mobility, and Objective Parameters of Delivery." *Osteopathic Research Web*.

²⁸ Fawkes, C. NCOR Author. NCOR Research Development Officer.

²⁹ "Osteopathy and Pregnancy." (2012) Osteopathy Care. Web.

Conclusion

This paper focused on the use of Osteopathic Manual Therapy for the pregnant patient. More specifically, the effects of Osteopathy as a treatment for pregnancy related symptoms, promoting an easier labor, and postnatal recovery were explored. If one thing should be taken away from this paper, it should be that this is a very promising topic that needs far more attention than it is currently receiving. The research and studies that have focused on Osteopathic treatment during and after pregnancy have brought about very positive results. However, in order for this knowledge to become more widespread, further research needs to be done to obtain solid proof on the efficacy of treatment. Ideally, Osteopathy to treat pregnancy complaints will soon become mainstream care for expectant mothers. It is an optimal route of treatment as it is noninvasive and has no negative effects on the growing fetus.

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