

The Benefits of Manual Osteopathic Treatment During Pregnancy

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Osteopathy was founded by Dr. A.T. Still in the late 1800's. The term osteopathy comes from Greek words 'osteon' meaning 'bone', and 'pathos' meaning 'disease' (Parsons, et. al, 2006). Manual osteopathy is a system of health care that looks at the diagnosis and treatment of the body as a whole unit. The body functions together as a whole in harmony as a result of the sum of each individual part. Therefore, any change within a part of the body, both internally and/or externally, will have a compounding effect on the whole. The philosophy of manual osteopathy is to treat the whole body rather than just a disease, emphasizing on the body's innate abilities to heal itself with some external help. It is a type of alternative medicine and is a form of drug-free non-invasive manual medicine. Manual osteopathy focuses on the treatment of neuromusculoskeletal disorders through a broad range of manual techniques such as joint mobilizations, muscle energy techniques, soft tissue therapy, visceral manipulation, cranial sacral therapy, and stretching. The effects of such techniques include; the stretch and release muscles tendons and fascia that inhibit mobility, to strengthen unstable joints, to enhance circulation and lymphatic drainage, improve nerve supply. Through this holistic therapy approach there is also an importance for manual osteopaths to educate about diet, exercise, and lifestyle choices, to provide overall good health and wellbeing.

One of the most amazing, life changing experiences of a female's life is the process of reproduction. The development of pregnancy begins at the fertilization and/or implantation, lasting 40 weeks. The duration of a pregnancy is divided into three trimesters, each of which are approximately three months long. During each trimester, the female body undergoes various physiological and structural changes. Lavelle (2012) explains,

The release of such hormones as relaxin and progesterone changes the body's physiology, which can exaggerate anatomic stresses in the maternal body. Relaxin which starts to be released around the 10th to 12th week of pregnancy, causes laxity within the sacroiliac joints and pubic symphysis to allow for widening of the pelvic girdle. (p343) This directly applies to the philosophy of manual osteopathy, treating the body as a whole unit, a change in one function affects the function of another. Therefore, changes seen throughout the 40 weeks of pregnancy have a compounding effect on the maternal body.

Although the changes of a female are essential for the development of the fetus it can have negative effects on the body. Due to the dynamic neuromusculoskeletal relationship, muscular imbalance and neurological functions women may experience some of the following somatic dysfunctions;

- Extension of the occiput and the first vertebrae may cause suboccipital neuralgia myalgias, neck pain and stiffness, headaches, sinus problems, and allergies.
 - Anterior angulation of the cervical region may cause cervical dorsalgia, thoracic outlet syndrome, pain between the shoulder blade, neck pain, and arm pain and numbness.
 - Anterior tilt of the pelvis may cause sciatica, lower back pain, leg pain, and difficulty breathing.
 - Hyperkyphosis of the upper thoracic region may cause rib pain, trouble breathing, and poor digestion.
 - Accentuated lumbar lordosis may cause low back pain and strain, and constipation.
- Hyperextension of the knee and flattening of the foot arches may cause feet and foot pain (Malakandi, 2013).

As these anatomical changes occur it creates restrictions throughout the body causing an imbalance to the muscular, nervous, and circulatory flow. The increase weight to the front of the

body from breast and uterus growth will change the centre of gravity. The center of gravity in a regular person is at the anterior aspect of S2 when standing in a neutral position. In trimester two, center of gravity shifts to the vertebral disc, it is compressed at the back and the anterior is slightly opened. Lumbar lordosis may also be seen. Upper Crossed Syndrome and Lower Crossed Syndrome are seen during pregnancy and occurs due to one cross being inhibited while the other is tight. Lower Crossed Syndrome is more prominent due to the fact that as the fetus starts to grow the abdominal muscles stretch and become weak. An example of Lower Crossed Syndrome would be tight erector spinae and iliopsoas, and weak abdominals and gluteus maximus.

Before beginning any treatment, it is important for the client to inform the practitioner of their current health status. Contraindications to receiving manual osteopathic therapy include but are not limited to the following conditions; placental abruption, ectopic pregnancy, distress of the fetus, preterm labor, undiagnosed vaginal bleeding, unstable vital signs of the pregnant mother, elevated maternal blood pressure, untreated venous thromboembolism (Chila, 2011). Pre-eclampsia is a pregnancy complication characterized by high blood pressure and sign of damage to another organ system, most often the liver and kidneys. A patient with pre-eclampsia should not be treated, refer back to family medical doctor. During trimester one there should be no treatment done on the lumbar or sacrum because it is too high risk of causing a miscarriage due to the whole body being so relaxed in preparation for the baby. At no point should there be direct compression or pressure on the sacrum or lumbar due to the same risk. However, soft tissue therapy on lumbar is allowed. When treating the patient during first trimester the patient may lay in any position. During trimester two patient may still lay in a prone position as long as it is not too long due to vena cava pressure. This is also dependant on the comfort level of patient. During trimester three the patient techniques should be done in the seated position, sometimes side laying depending on patients' comfort. While side laying, always make sure the body is supported with pillows.

Osteopathic manual therapy is optimal for pregnant female who seek the alleviation of musculoskeletal pain (Z.Abbasi, 2013). It is important to being with a detailed osteopathic assessment as well as an orthopaedic examination. Checking the patient's Center of Gravity, looking for stability and gravitation pull. The female body is continuously changing and adjusting for the growth of the fetus therefore, each treatment may present a new issue. It is important to treat the whole body as a unit not just for individual parts. Neck pain may be caused from increased frontal load and tight pectorals which are causing a thoracic kyphosis, also explaining the shortness of breath. The increase in frontal load may also cause an anterior tilt of the pelvis, causing sciatica, leg pain, an accentuated lumbar lordosis and back pain. Which in turn can be causing constipation. Hyper lordosis can cause increasing stress across the vertebral facets of the lumbar spine and increased pressure on the intervertebral discs. Relieving some of the muscle tension in the lower back can increase mobility within the lumbar spine. Joint mobilization techniques can be used to decrease pain and muscle spasms, increase blood flow a flexibility, and decrease inflammation. Muscle energy techniques will help stretch and strength muscles, relax and decrease spams, and decrease muscular pain. Therefore, helping with common tighten muscles during pregnancy; hip flexors or iliopsoas, rectus femoris, quadratus lumborum, pectorals, internal rotators and elevators of the shoulders (Chila, 2011). Muscles that are commonly weakened are; gluteal, hip extensors, hamstrings, abdominal muscles, mid and

lower trapezius, external rotators of the shoulders, neck flexors, intercostals (Chila, 2011). Soft tissue therapy will help with physiological effects such as adhesions, vascular, lymphatics, as well as neurological (CNS, PNS, ANS). Studies have shown that only 15 minutes of massage can result in a reduction in saliva levels of cortisol, the stress hormone (Turnbull, 1995). Throughout all the changes the female's body it under a lot of stress. Therefore, incorporating soft tissue therapy into a treatment has psychological effects of decreasing stress and anxiety.

It is important to treat the diaphragm during pregnancy as many women experience difficulty breathing. During pregnancy the true ribs will be compressed, ribs 8-12 will be slightly more opened therefore muscles are being strained causing tenderness. This is also why some women may have ribs dislocated. On a pregnant woman it may be difficult to palpate the diaphragm, instead facilitate breathing to increase oxygen intake. Lymphatic drainage techniques such as lymphatic pump can also help improve drainage of fluid congestion and prevent detrimental effects of fluid overload (Lavelle, 2012).

Lower back pain and posterior pelvic pain are common during pregnancy and often remain a disabling problem postpartum (Vermani et al., 2010). In 2008, Kofler conducted a systematic review to examine the effectiveness of osteopathic manipulative treatment for low back pain in pregnant or postpartum women. Five studies were examined for osteopathic manipulative treatment for lower back pain and three for postpartum lower back pain. Evidence suggested osteopathic manipulative treatment had a significant effect on decreasing pain and increasing functional status in pregnant women with lower back pain. Although the evidence was not as strong for osteopathic manipulative therapy only postpartum, there was still a decrease in pain and increase in functional status (Kofler, 2008). Therefore, these studies show a greater effectiveness when receiving osteopathic manipulative treatment during pregnancy and for a continuation of treatment postpartum.

In a randomized controlled trial done by the German Academy of Osteopathy, investigated the influence of osteopathic treatments on the length of delivery. Divided into two groups was 78 first-time pregnant women. One was a treatment group, one was a control group. The treatment group received osteopathic treatment after the first, second, and third trimester. The osteopathic dysfunctions found in the cranial, visceral, and parietal system were diagnosed and individually treated according to the principles of osteopathy. The results found an overall reduction in the length of delivery time as well as a decrease in the pain intensity during the delivery (Nistler, et. al., 2010). Therefore, this study shows the positive impact manual osteopathic treatments have on pregnancy.

Manual osteopathic treatment postnatally can help to reduce any pain or discomfort after childbirth and help restore a healthy pelvic alignment after labour. During the first few weeks women may experience muscle fatigue therefore main goals should be to provide comfort and relaxation by decreasing muscle tension (Johnson, 2013). Joint mobilization techniques focusing on the spine and pelvis to help align to a new center of gravity. Muscle energy techniques should be done to work on tight or weakened muscles. Cranial sacral therapy can help bring the nervous system back into balance. Although the time line of treatment is patient dependent there are numerous benefits to postpartum manual osteopathic treatment.

Pregnancy is an amazing experience that should not be limited by pain and discomfort. Manual osteopathic therapy is an effective way to help reduce pain in the hips and lower back, shortness of breath and digestive disturbances. Remembering the philosophy of manual osteopathy and treating the body as whole unit and the body's ability to heal itself. Manual osteopathic treatment is beneficial for female's during pregnancy.

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