



## Osteopathic Treatment of Specific Conditions

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### Spinal pain: back and neck pain

The normal spinal curves (lower back arched, mid-back rounded, and neck arched) exist to aid with shock absorption during our daily activities. The spine consists of:

- 7 cervical vertebrae (neck bones) C1-C7
- 12 thoracic vertebrae (mid-back bones) T1-T12
- 5 lumbar vertebrae (lower back bones) L1-L5
- 5 sacral vertebrae fused into 1 bone - sacrum
- Coccyx or tailbone



There are discs between the vertebrae. Nerves pass through a canal at each vertebral level from the spinal cord to supply muscles and organs. The centre line of gravity falls through the spine through vertebrae designed to accept the load, and when optimally placed there is balance between the soft tissues and structures at the front and back of the body. A fall on the tailbone or a whiplash injury after a car accident can result in the flattening of a spinal curve (flat lower back or neck), or the exaggeration of a spinal curve (more rounded mid-back). A postural imbalance occurs leading to joint degeneration (arthritis, disc protrusion or slipped disc), and soft tissue dysfunction (tendinopathies, carpal tunnel). The organs are attached by ligaments to each other, and to the spine, pelvis and ribcage. They also receive their nerve supply from various spinal segments.

Osteopathic treatments of the spine include:

- Techniques to release joint compactions between the vertebrae and to mobilise joint restrictions
- Soft tissue techniques to address fascial, ligament and muscular tensions (e.g. Release of the thoracic diaphragm prior to working T12-L3 where it attaches, and C3-C5 as this is the source of the nerve supply of the diaphragm)
- Techniques to release the dura (nerve tissue surrounding the brain and spinal cord), as the dura passes through each vertebra and surrounds the nerves as they pass out of the spine. As the dura is continuous with the entire nervous system, a tension in the system at the level of the head or the pelvis, for example, can cause tension in the sciatic nerve in the leg.
- Visceral or organ techniques. An example is the ileocaecal valve, the junction of the small and large intestines in the area of the appendix. This attaches to the front of the right sacro-iliac joint, and gets its nerve supply from T10-T12, and the vagus nerve from the head. Therefore, a client with chronic constipation could experience chronic sacro-iliac restriction and tension in the mid-lower back.



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## Whiplash

The most common causes of whiplash are car accidents and sporting injuries. A whiplash injury can cause a wide spectrum of soft tissue injuries ranging from minor strains to major disruption of tissues in the neck and spine. Whiplash symptoms can include:

- Pain and stiffness in the neck, upper - lower back, shoulders and ribs
- Pins and needles or numbness in the arms or legs
- Headaches
- Dizziness
- Blurred vision
- Ringing in the ears
- Fatigue
- Inability to focus

Symptoms of whiplash can occur immediately or can develop over time. Resolution of symptoms usually occurs in a matter of weeks or months. In some cases, pain and stiffness can be of a longer duration such that the central nervous system can become sensitised, resulting in a more chronic situation. In all cases, some movement and appropriate physical activity are recommended to promote tissue healing and circulation.

Osteopathy is unique in its ability to address the many layers involved in a whiplash injury - joint, neuromuscular, fascial and fluidic systems. During impact, the direction and force of the trauma can become imprinted in the fascia and disturb the fluids. Osteopathic treatment is excellent in the acute stage of whiplash as there are extremely gentle techniques that can access the fascial tensions, calm the fluids and



realign joints. In chronic situations there are many techniques in the osteopathic realm that influence the central nervous system and the autonomic nervous system (sympathetic and parasympathetic) which are often implicated. Osteopathic treatment of whiplash may include:

- Techniques to:
  - Calm the fluids and promote good fluidic circulation throughout the nervous system
  - Balance the autonomic nervous system. After a whiplash injury, clients commonly report feeling that their systems are “shaken up.”
  - Release joint restrictions
- Fascial techniques to remove the strain and shock of the impact
- Advice regarding posture, exercise and activities

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## Headaches

There are many different classification of headaches, such as tension-type, cervicogenic (from the neck), and migraines.

- **Tension-type** headaches are typically felt on both sides of the head like a tight band, and are accompanied by tenderness in the muscles of the head and neck.
- **Cervicogenic** headaches are usually located on the same side as the neck problem, and may be accompanied by neck pain, tenderness, reduced movement, nausea, dizziness, and light and sound sensitivities.
- **Migraines** are usually pulsating, one-sided headaches, with nausea and sound and light sensitivities.



Osteopathic treatment of headaches can be extremely effective and can include:

- Soft tissue and joint techniques for the neck, upper back, clavicles and upper ribs to improve circulation of the lymphatic fluid, and blood to and from the head
- Cranial bone techniques to free the dura (envelope surrounding the brain and spinal cord), and the passageways of the nerves and blood vessels through the head and upper neck. The trigeminal nerve is especially important in cases of headaches and may be addressed during treatment of the cranium and upper neck. Cranial techniques also improve the client's vitality, and calm the nervous system.
- Soft tissue and joint techniques to address postural compensations elsewhere in the body which may be influencing the headaches.

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### Soft tissue injuries: sprains, strains, tendonitis

- **Ligaments** attach one bone to another and serve to increase the stability of a joint. A grade 1 sprain involves tearing of a few fibres, grade 2 involves a good proportion of fibres, and a grade 3 sprain is a complete tear.
- **Muscles** can be strained or torn also, and the degree of injury is graded as above.
- **Tendons** attach muscles to bones. Complete or partial tears can occur here, without obvious trauma, usually in tendons where the blood supply is naturally less. An example is the achilles tendon. Tendons are also susceptible to overuse. They can withstand strong tensile forces, but deal less well with compression forces. With increased strain some fibres fail. This is compounded by the reduction of blood supply to the tendon in areas of compression or friction. With tendon injury, acute inflammation may only last 5 days. The



disruption in the connective tissue and blood vessel changes in a tendon subjected to prolonged stresses and strains leads to tendinosis and tendinopathy. The term tendonitis is used less often now. An example is supraspinatus tendinopathy - part of the rotator cuff musculature of the shoulder joint.

- A bursa is a small fluid-filled sac usually situated between a bone and a tendon, and its role is to reduce friction. It can be prone to overuse injuries also. An example is trochanteric bursitis on the outer side of the hip.

**Osteopathic treatment of soft tissue injuries may include:**

- The RICE method is used in the acute stage to minimise the extent of the soft tissue injury. R is for rest, as ceasing activities will reduce bleeding and swelling. I is for ice, and should be applied intermittently for 10 minutes for up to 48 hours, taking care not to apply it in areas where blood circulation is impaired. Ice is not placed directly on skin to avoid burns. C is for compression, to minimise bleeding and swelling. E is for elevation, to avoid pooling of swelling.
- Cranial techniques and techniques that address the fluids in the area of injury can help with overall fluid flow
- Joint realignment and fascial techniques can improve the drainage of fluid. In a sprained and swollen ankle the junction of 3 bones in the ankle/foot which are commonly injured is called the sinus tarsi. This acts like the drainhole of the sink. When the respective bones are realigned, the veins in the area can drain the swelling.
- Soft tissue and joint techniques to address postural issues elsewhere to alleviate stress on the injured area, whether by trauma or overuse
- Techniques to address the spinal segments of the neck or back to ensure unimpeded nerve supply to the injured muscle or joint



- Appropriate exercise is important to retrain balance receptors in the injured ligaments and tendons, to retrain muscle patterning so that the injury does not recur, to strengthen weak muscles and to lengthen tight tissues

Grade 3 injuries or partial-complete tendon tears require consultation with a medical doctor. Tendinopathies can take a long time to resolve, particularly if the client continues to participate in the aggravating activity. The client's technique in performing the aggravating activity may need to be examined, and ergonomic advice at work or coaching training errors in sport may be recommended.

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### **TMJ / jaw problems (Temporomandibular Joint)**

This condition is often characterized by jaw pain, clicking, locking, headache, earache, ringing in the ear (tinnitus), clenching, grinding and sinus issues. It is usually part of a more generalised musculoskeletal dysfunction. Osteopathic treatment of this condition will usually include:

- Soft tissue techniques to release tension in the jaw muscles and ligaments
- Joint techniques to realign the TMJ
- Cranial techniques to mobilise the bones of the roof of the mouth and the cranial base
- Visceral techniques to mobilise fascial tensions associated with the jaw e.g. stomach, oesophagus
- Techniques to address joint restrictions and soft tissue tension in the neck, particularly the upper neck
- Techniques to release postural adaptations elsewhere in the body which may be influencing the jaw



Osteopathic treatment works exceedingly well in **orthodontia** as it expedites the movement of the bones to which the teeth are attached, and assists in balancing the bite. Conversely, in clients whose TMJ has difficulty in maintaining alignment, a dental consultation may be recommended to address bite issues.

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### Joint dysfunction and arthritic pain

**Osteoarthritis** is a degenerative joint condition caused by breakdown of cartilage, causing pain and inflammation. It is a condition that affects the normal population as they age, or can occur prematurely in a joint injured earlier in life. Typically it affects the hands, and weight bearing joints like the neck, lower back, hips, knees and feet. There is a tendency for a joint which is injured or arthritic to cause muscle weakness and compensatory movements in the neighbouring joints. An example of this is an arthritic knee, whereby the hip musculature can be substantially weaker than normal. In cases of arthritis in the spine, the corresponding nerve coming from that segment may not fire appropriately to the muscles it supplies. The result can be weakness in certain leg or arm muscles, and less support at the joints around which they work. For more information on soft tissue injuries around joints (ligament, tendons, muscles, bursa) please refer to soft tissue injuries above. An osteopathic treatment of joint dysfunction may include:

- Joint mobilisation and soft tissue techniques to improve flexibility
- Cranial techniques and local joint techniques to promote better fluid flow and to flush out the by-products of inflammation
- Techniques to address the area of the spine which is the source of the nerves that supply the joint and its corresponding muscles. An example is treating the L2 L3 spinal segments in a client with knee pain. The L2 L3 region supplies the knee joint itself, and the quadriceps and groin muscles which act at the knee.



- Visceral (organ) techniques to address tensions that can cause referred knee pain. An example is mobilising a tension of the kidney with regard to the underlying hip flexor muscle, affecting its connection to L2 L3 and the knee.
- Soft tissue and joint techniques to address postural compensation elsewhere in the body which could be influencing the affected joint
- Education regarding joint protection, and exercises to promote flexibility and strength in the affected joint and neighbouring areas

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### Nerve pain - sciatica, tingling, and numbness

The central nervous system consists of the brain and spinal cord, and is surrounded by a series of envelopes collectively known as the dura. After each pair of nerves exit the vertebrae or bones of the spine, they pass downwards through the arms and legs. Cerebrospinal fluid (CSF) is produced in the brain, and circulates throughout the entire nervous system. As the nerve endings become increasingly smaller in the periphery, there is mixing of the cerebrospinal fluid and the lymphatic fluids. The lymphatic system is important for our immune systems.

As the nervous system is one continuous unit, tension in one area may cause symptoms elsewhere. **One example is the sciatic nerve** which comes from the spinal vertebrae of L4 - S3 in the lower back and pelvis. As it exits the vertebrae through a bony canal it passes through the hip muscles and down the back of the leg. It supplies some hip muscles, hamstrings, calf muscles and some muscles in the lower leg and foot. Symptoms can range from pain in the lower back, hip and/or leg, pins and needles, numbness, muscle weakness and loss of reflexes. More serious symptoms like a sudden lack of control of bladder or bowel function requires immediate attention from a medical doctor. Sciatic nerve irritation can occur due to mechanical pressure



of a disc pressing on it, narrowing of the bony canal from arthritis, or chemicals from inflammation. The nerve passes through the hip and leg through a series of bony and soft tissue tunnels. Tight muscles, fascia and joint restriction can impede the sliding and gliding of the nerves in these tunnels.

**Osteopathic treatment for this condition may include the following:**

- If an **acute disc protrusion** is suspected, a referral to a medical doctor is recommended for appropriate tests and medication.
- Advice regarding application of ice, posture, activity modification and positioning for pain relief and disc health is given
- Osteopathic treatment in the early stages may focus on gentle nerve tissue techniques. For example, release of tension in the nerve tissue in the head can greatly influence what a client feels in their pelvis or leg.
- Gentle fascial and joint mobilisation techniques improve the local mechanics around the disc, and also influence general body alignment and posture which may take pressure off the injured area
- Tension in the visceral (organ) system also may influence the local joint mechanics. An example is chronic constipation, whereby the fascia which attach the intestines to the front of the sacro-iliac joints and lower back, can create chronic joint misalignment and restriction.
- **Arthritic changes** can narrow the bony canal through which the nerve passes from the vertebra (spinal stenosis). What one sees on X-Ray does not always predict the symptoms that result. In this case, "what you see is not always what you get."
- Ensuring nervous system mobility in the head, through the spine, pelvis and legs can greatly influence symptoms.
- Cranial techniques to promote good fluid circulation are important, as are fascial, visceral and joint mobilisation techniques



- Exercise is recommended to reduce stiffness and to strengthen muscles to support the arthritic joints.
- **Chemical irritants** leftover from inflammation can affect the sciatic nerve.
- Osteopathy is unique in the types of nervous system mobilisation techniques, and fluid flushing techniques that exist.
- **Piriformis muscle syndrome** - Tight muscles, fascia, and joint restrictions can prevent the normal slide and glide of the sciatic nerve that occurs as the leg is moved. An example of this is piriformis muscle syndrome. Piriformis is a muscle deep in the buttock area. The sciatic nerve passes beside piriformis in some, and through the muscle in others. Regardless, if it is tight, it can prevent normal sliding and gliding of the sciatic nerve provoking pain in the buttock and/or the outer lower leg, and pins and needles sensations.
- Osteopathic techniques to loosen the hip muscles and fascia, and joint mobilisation techniques for the pelvis help, as well as the nerve tissue and fluidic techniques that are described above.

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### **Difficult digestion, acid reflux, constipation**

The digestive tract consists of the oesophagus, stomach, small intestine and large intestine (colon). Other organs like the pancreas and liver also play a role in digestion. Its nerve supply is the vagus nerve coming from the head, the spinal segments T5 - L2, and the sacrum in the pelvis. The organs of the digestive tract are attached by ligaments to neighbouring organs, and to the spine, ribs and pelvis. Osteopathy is unique in its ability to assess and treat the motion of these organs. It also ensures that the area of the spine which is the source of nerve supply to these organs is mobile and well-aligned. There are ligaments that attach the oesophagus to the diaphragm, through which it passes to meet the stomach. Disruption of these ligaments or tension



in the diaphragm can result in **acid reflux** and **hiatus hernia**. Restoring mobility to the organs, spine and sacrum, allows for balanced nervous system control, and improved digestion and elimination. **Chronic constipation** can result in fascial tensions that pull on the intestinal attachments to the pelvic bones and lower back. This frequently leads to chronic restrictions and stiffness.

### **Painful periods and ovulation/bladder issues/chronic pelvic pain**

Some women experience discomfort around the time of their **period** and/or **ovulation**. Symptoms can range from **pain** and cramping in the lower abdomen, lower back, pelvis, pelvic floor muscles and legs. The uterus (womb) is attached to the bones of the pelvis by ligaments. The ovaries are attached to the upper lumbar vertebrae by ligaments, and the nerve supply for both these organs is from these same vertebrae and the sacrum. Hormonal control is governed by the pituitary gland in the brain.

**Bladder issues** can affect both women and men, with symptoms ranging from urgency, frequency, incontinence (involuntary loss of urine), chronic infection and pain.

Ligaments and fascia attach the bladder to the pelvic bones, womb, rectum, and upwards towards the liver. The ability to hold urine depends on the function of the sphincters (valves) in the urethra (the passage from the bladder to the exterior), and the pelvic floor musculature. The nerve supply to the bladder is from the upper lumbar vertebrae and the sacrum.

Osteopathic treatment of period or bladder issues includes:

- Soft tissue and joint techniques to mobilise and align the pelvis to which the bladder and womb are attached
- Soft tissue and joint techniques for the lower back and sacrum, the source of the nerve supply of these organs
- Techniques to release tension from:
  - A tight pelvic floor, and to improve muscular control



- The coccyx (tailbone) to aid the pelvic floor muscles and to free the dura (nerve tissue)
- Cranial techniques to improve function of the pituitary gland
- Soft tissue and joint techniques to address postural issues elsewhere in the body which may be influencing the pelvic problems

Bladder issues and painful periods can usually be very successfully treated with a wide variety of techniques performed on the exterior of the body. There are cases, however, when a more successful outcome may be achieved by performing techniques internally on the tailbone, bladder, urethra and pelvic floor. If this is the case, the reasons, techniques and issues of consent will be discussed in detail, and the client can freely choose how they wish treatment to proceed. Internal approaches are typically not performed on an initial visit. It is wise to consult medical advice as some bladder and menstrual symptoms are due to conditions which require care above and beyond osteopathy.

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### **Pregnancy discomfort, labour preparation and post-natal care**

If you are planning to have a child, an assessment by an osteopathic practitioner will ensure that your body is ready for the major changes that occur during pregnancy. Past injuries and traumas can make it difficult for the body to accommodate these changes. The added weight of the developing child places postural demands on the mother, and can cause pain and discomfort. Hormonal changes occur to enhance flexibility of the soft tissues for delivery of the baby. These changes affect the ligaments of the entire body and can make it more susceptible to strain. Symptoms during pregnancy can range from pain in the lower or mid-back, pubic symphysis pain, nausea, heartburn, shallow breathing and fluid retention. Osteopathic treatment helps to maintain alignment and flexibility of the pelvis, spine and ribcage. Treatment of



the diaphragm and the liver can positively impact symptoms of nausea, heartburn, shallow breathing and fluid retention.

A fall on the tailbone (coccyx), or other pelvic trauma, can lead to restriction and increased tension in the pelvic ligaments and pelvic floor musculature. Osteopathic intervention can ensure that the soft tissue is flexible and the pelvis well-situated to allow for easier **labour and delivery**. Every muscle has a nerve supply, and the uterus gets its nerve supply from the lower back and sacrum. Good alignment and mobility of these areas is one factor in allowing normal uterine contractions. Osteopathic treatment of the pelvis, lower back and abdomen can assist in optimal positioning of the baby to facilitate a safer delivery for mother and child.

**After delivery**, osteopathic treatment can help with realignment of the spine and pelvis, treatment of scars from tearing, episiotomies and caesarian sections, and teaching of good motor control of the pelvic floor muscles. If breastfeeding, a hormonally-driven flexibility of the ligaments continues to place the new mother at risk of strain, all while she is caring for a new-born and others at home. Osteopathic treatment can help address tensions and discomfort associated with prolonged positioning while breastfeeding. After an epidural, or following a difficult delivery where nerve injury may have been sustained, techniques to treat the nerve tissue can greatly help with pain, mobility and enhanced function of the muscles. In some cases the forces involved in delivery can place tremendous stress on the nervous system. As the nervous system is one continuous unit, the trauma occurring below can traction the system and contribute to post-partum depression. Cranial osteopathy is well-placed to address the physical tensions placed on the nervous system with cranial, pelvic, spinal cord and neural techniques.

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### Children: unsettled babies, colic, recurrent ear infections

Many childhood issues can respond positively to osteopathic intervention. These can range from unsettled babies, colic, sucking or feeding difficulties, digestive issues, wry neck (torticollis), disturbed sleep, cranial moulding, ear infections, learning and concentration difficulties, ADHD, chronic immune problems like sinusitis or recurrent colds, dental and orthodontic concerns, scoliosis, balance, and the injuries and strains from the multiple falls that are part of a normal childhood. Children are commonly thought to be immune to structural stresses and strains, and resilient to injury. In reality, strains and tensions early in life often become incorporated into the growing body. Fortunately, children have a profound life force which can allow rapid results with osteopathic treatment.

The position that a baby adopts in the womb, or a **birth** that is too rapid, prolonged or where forceps or vacuum is used, can place considerable forces on a baby's head. The baby's head has the ability to absorb these stresses normally, and with sucking, yawning and crying, the odd-shaped heads that normally present self-correct. Cranial osteopathy can help when the presentation of **cranial moulding** (misshapen head) is more prolonged. The occipital bone at the base of the head is a series of 4 bones, yet to fuse, in the new-born. Passing through the cranial base are the hypoglossal, accessory and vagus nerves. The hypoglossal nerve supplies the tongue, and if compromised, the baby can have difficulty **latching on and sucking**. It can also lead to poor habits of tongue thrusting, swallowing, speech issues and dental bite occlusion. The vagus nerve, if irritated, can result in **vomiting and digestive problems**. The accessory nerve supplies the sternocleidomastoid and trapezius muscles which are implicated in cases of torticollis or **wry neck**. Some babies have difficulty **sleeping** when their nervous systems are agitated by mechanical stresses.

Cranial strain patterns, fascial and joint tensions can deplete the child's resources and result in increased susceptibility to **recurrent infections**. It can also cause a child to be uncomfortable and restless if in one position for too long, and may be labelled as



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“difficult” at school. Significant cranial compression may alter normal patterns of learning. Osteopathic treatment may positively affect outcomes, depending on the severity. Poor habits like tongue-thrusting can deprive the roof of the mouth of its normal tongue stimulation, and can result in developmental issues of the maxillae bones, to which the upper teeth are attached. **Bite and jaw** issues can manifest as the child grows. Cranial osteopathic techniques can mobilise and realign the bones of the jaw, and if **orthodontia** is necessary later, osteopathic techniques can help expedite matters and help the cranium accommodate the changes. Parents should bear in mind that some methods of orthodontia are friendlier to the cranium mechanism than others. It goes without saying that the normal **falls** and tumbles of childhood, and **sporting injuries**, can take their toll on the structure and function of a child as it is growing. Periodic consultations with an osteopathic practitioner can help nip these problems in the bud

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