



THE USE OF OSTEOPATHIC MANUAL MEDICINE IN THE SPECIAL NEEDS POPULATION

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**I have no relevant
relationships/affiliations with any
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OBJECTIVES

1. Identify osteopathic treatments that may be delivered in a wheelchair or bed.
2. Discuss traumatic brain injury, its impact on the entire body and osteopathic treatment.
3. Discuss uses and techniques of cranial osteopathy in neurodevelopmental disorders.

RATIONALE FOR TREATING THIS POPULATION

Persons having special needs even if only temporarily, can heal sooner and have less discomfort when OMT is used early in their care.

OMT can do several things to help patients who have special needs:

- it can aid in the diagnosis of some complicated patients
- it supports the patient and aids communication
- it can diminish pain so less medication is used
- it can deliver human touch and compassion which has been proven to aid in healing

OMT FOR PATIENTS CONFINED TO A WHEELCHAIR OR BED

GOALS FOR TREATMENT IN THE SPECIAL NEEDS POPULATION

Any patient who is confined to a certain position for a long period of time and/or has limited range of motion, will develop somatic dysfunction. This can be a result of inhibition or overstimulation of the autonomic system, restricted breathing or circulation. Patients who are confined to a wheelchair can develop many pelvic dysfunctions as well as scoliosis. In spinal cord injuries because sensation is affected, range of motion is affected.

Patients who are required to be in bed for long periods of time can develop muscle weakness in just a week, and may have circulatory and respiratory problems as a result.



OMT GOALS

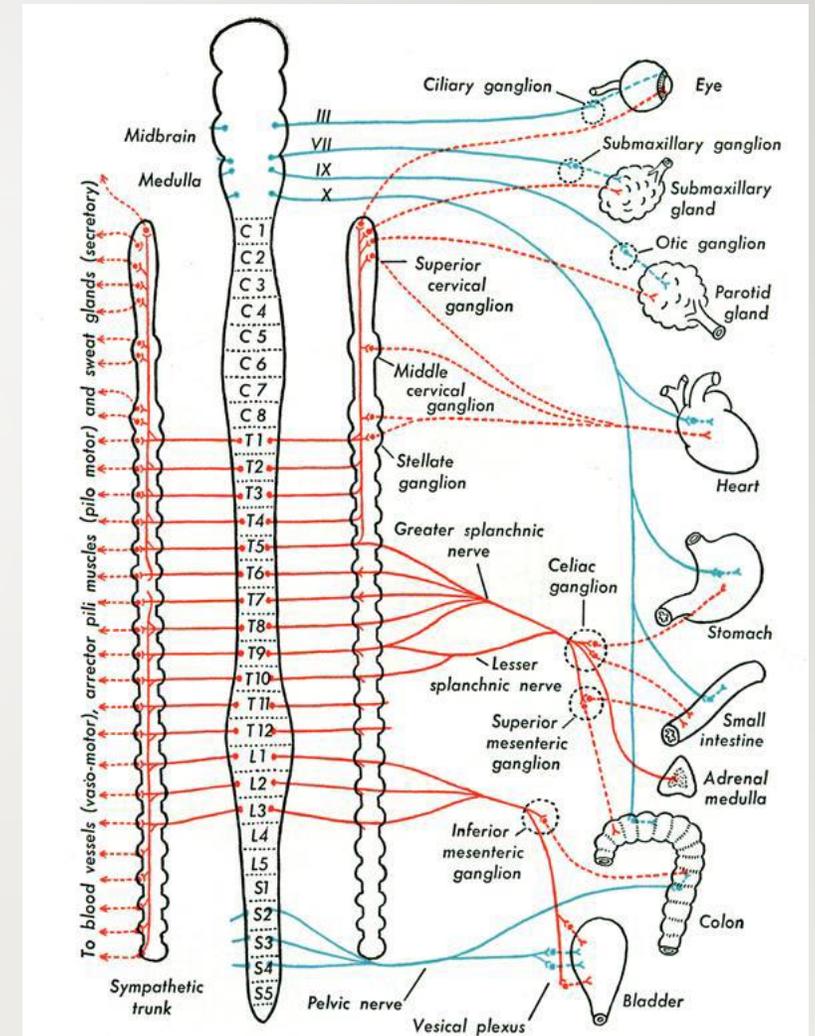
1. **Restore autonomics to near normal function**
2. **Restore ribcage function and normalize breathing**
3. **Restore the lymphatic system to near normal function**
4. **Restore the vascular system to better function**

TREATMENT OF SYMPATHETICS

Acute insult from illness increases sympathetic activity and any imbalance between sympathetic and parasympathetic activity interferes with the healing process and can compound chronic conditions.

Points to treat include:

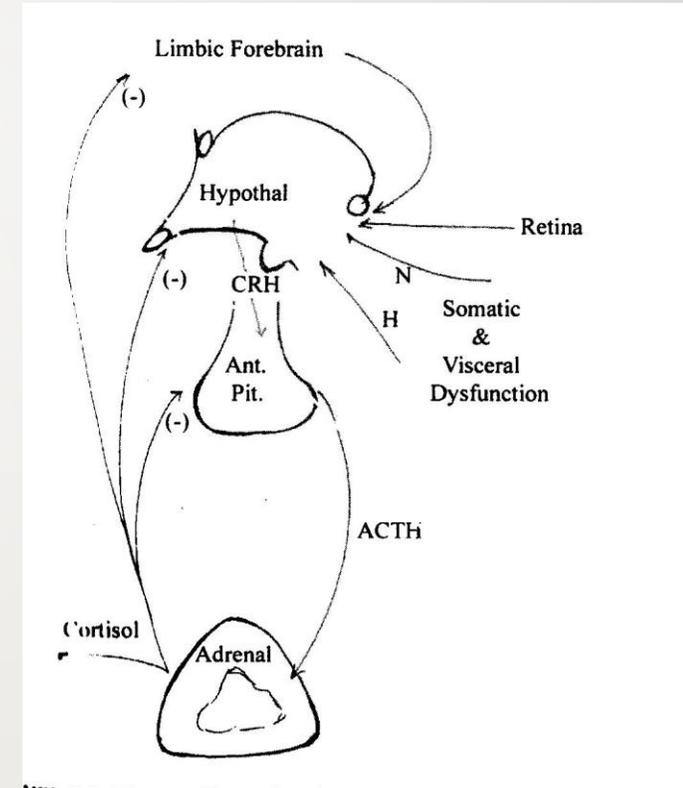
- celiac ganglion T5-T9
- superior mesenteric ganglion T 10-11
- inferior mesenteric ganglion T 12-L2
- adrenal points at T-10



TREATMENT OF SYMPATHETICS

Persons having chronic medical conditions can have adrenal dysfunction so any treatment that may restore partial function will aid in recovery.

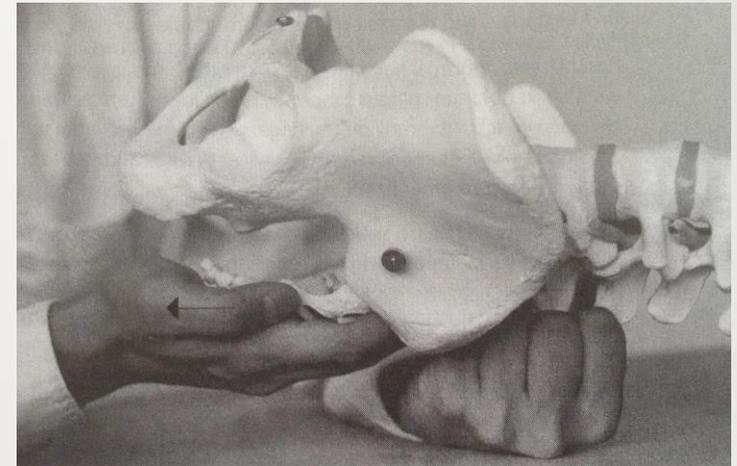
This diagram illustrates how somatic and visceral dysfunction influences the hypothalamic-pituitary-adrenal pathway.



TREATMENT OF PARASYMPATHETICS

After treating the sympathetic system, the parasympathetic system may be treated. Goals of this next step in treatment include eliminating restrictions at the occipital-mastoid sutures and freeing any restrictions on the vagus nerve. Removing sacral restrictions is also useful.

Always remember to treat the sympathetic system first.



OPTIMIZE BREATHING MECHANICS

Treating the respiratory system can prevent atelectasis which may lead to pneumonia in persons who are non-ambulatory. OMT can increase oxygen saturation in the blood as well as aid in CO₂ release. This treatment may be done with the patient supine or seated in a chair.

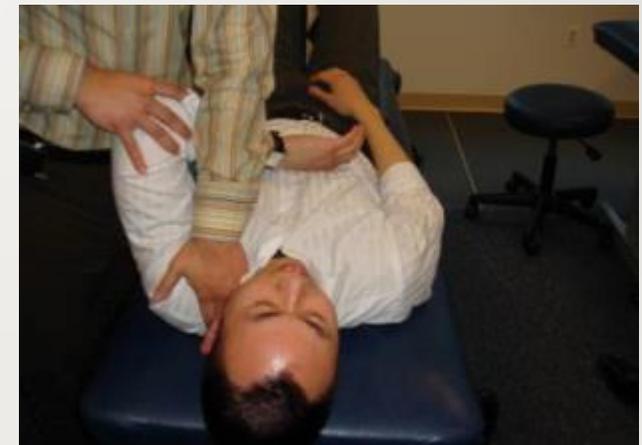
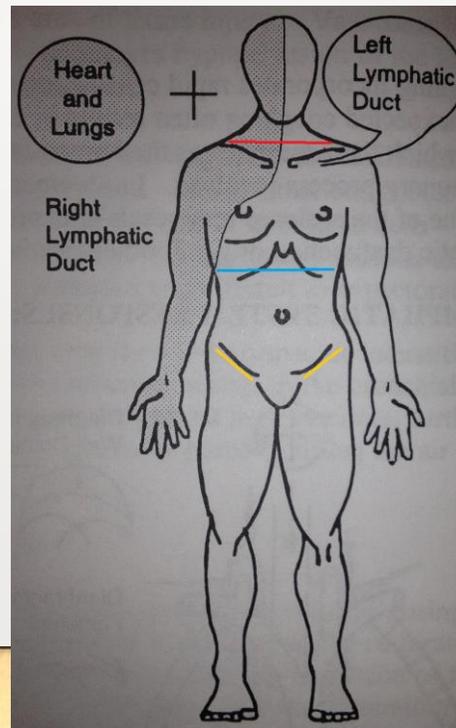
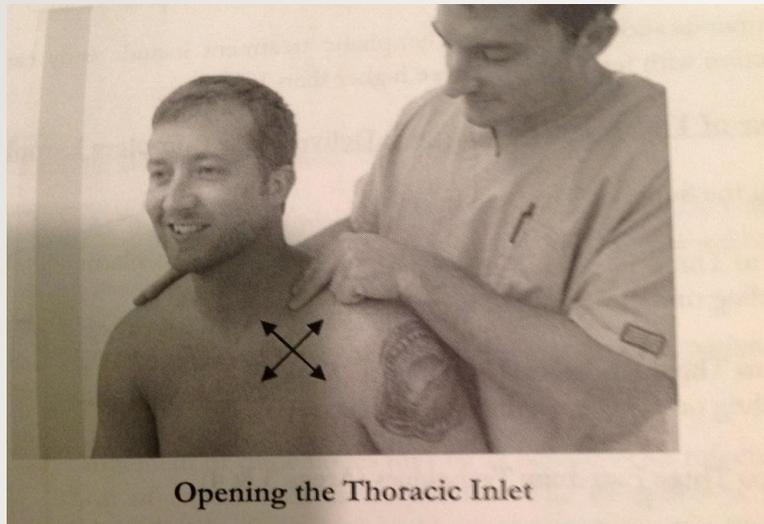


Rib raising



INCREASING LYMPHOKINETICS

Rib raising can facilitate lymphatic drainage and may also aid in post operative paralytic ileus. Persons confined to a wheelchair ay also have slow bowel transit time leading to chronic constipation. Thoracic and pedal pump can be used to increase lymph flow to reduce edema postoperatively and to increase flow to healing areas of the body. Always remember to open the thoracic inlet before beginning treatment.



LYMPHATIC TECHNIQUES

These techniques can be delivered in supine position or seated.

Pedal Pump (Direct)

Dx: Lymphatic Congestion

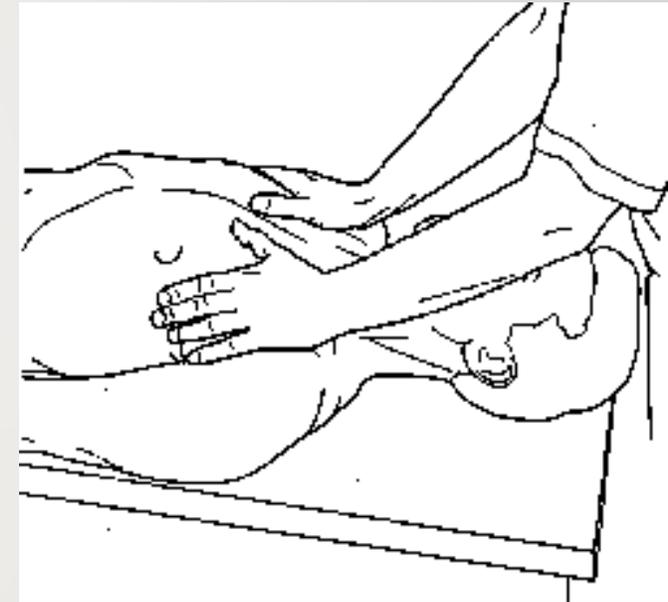
1. Place the palms of both hands over the plantar surface of the feet and dorsiflexes them
2. Apply low velocity, moderate amplitude springing force in cephalad direction to induce a sloshing motion of the abdominal contents
3. Recheck lymphatic status



Kimberly Manual 2008 page 61 (iKM 94)

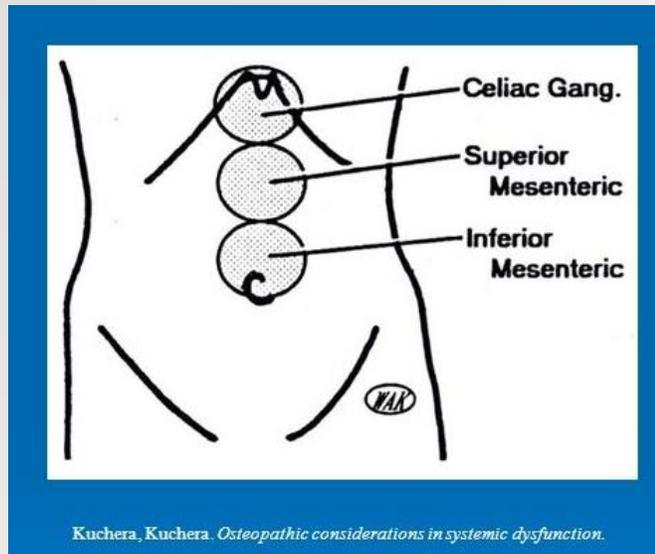


Thoracic pump

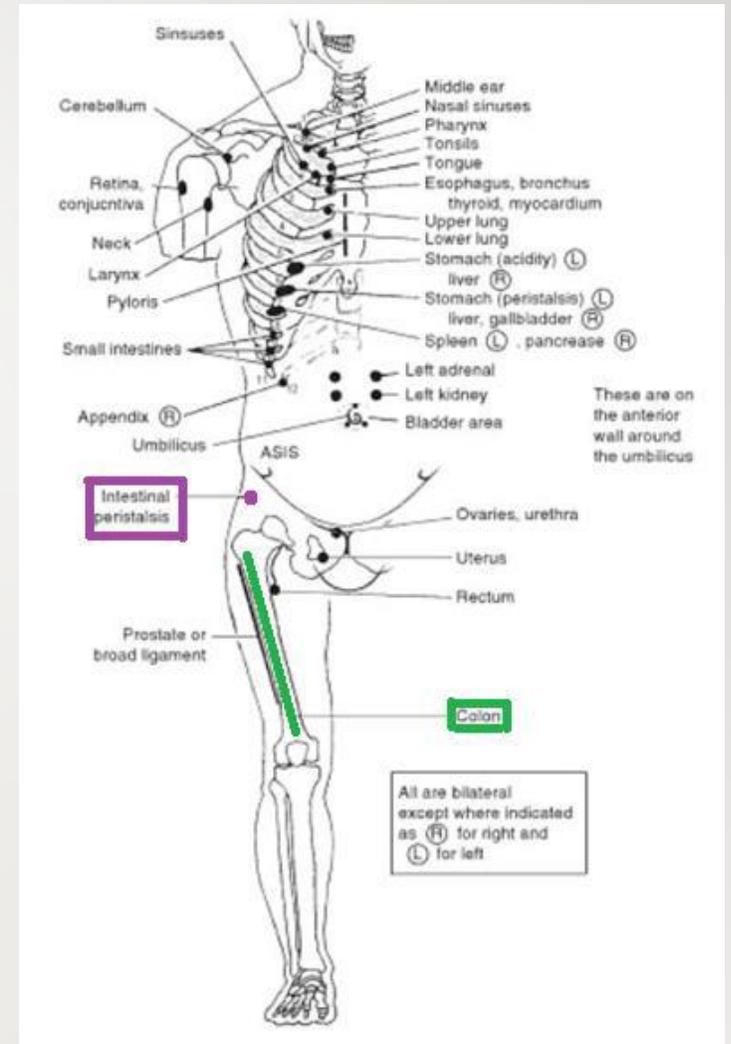


MESENTERIC RELEASE

Constipation is a frequently encountered problem in persons with decreased mobility. The use of narcotics for pain control can also play a major role in constipation. Mesenteric release can reduce or eliminate the need for laxatives and decrease the discomfort associated with postoperative ileus and chronic constipation.



Techniques can be used with respiration and be carried out in a seated position if necessary.



CONSIDERATIONS IN THE VERY ILL



Patients in a bed or wheelchair may have a variety of equipment about which the physician should be aware. Feeding tubes, indwelling catheters, intravenous ports and lines, and tracheostomy tubes should be considered before treatment begins. Some caveats:

- no HVLA in very sick patient
- no treatment in an area of a thrombus
- no treatment near recent incisions
- the sicker the patient, the shorter the treatment

Listen to your hands, and make sure that you have adjusted the bed or chair so you do not hurt yourself.



MESENTERIC RELEASE FOR ABDOMEN

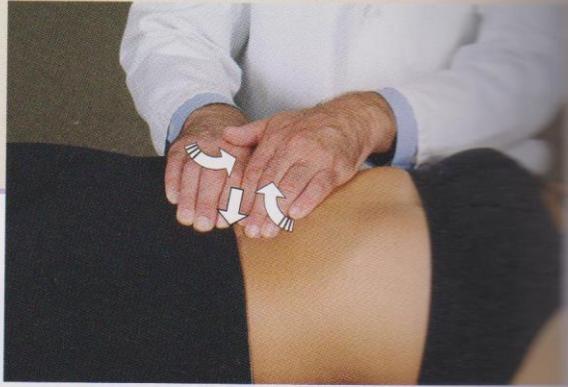


FIGURE 16.60. Supine position.



FIGURE 16.61. Lateral recumbent position.

Small bowel



FIGURE 16.64. Supine position.



FIGURE 16.65. Lateral recumbent position.

Ascending colon



FIGURE 16.68. Supine position.



FIGURE 16.69. Lateral recumbent position.

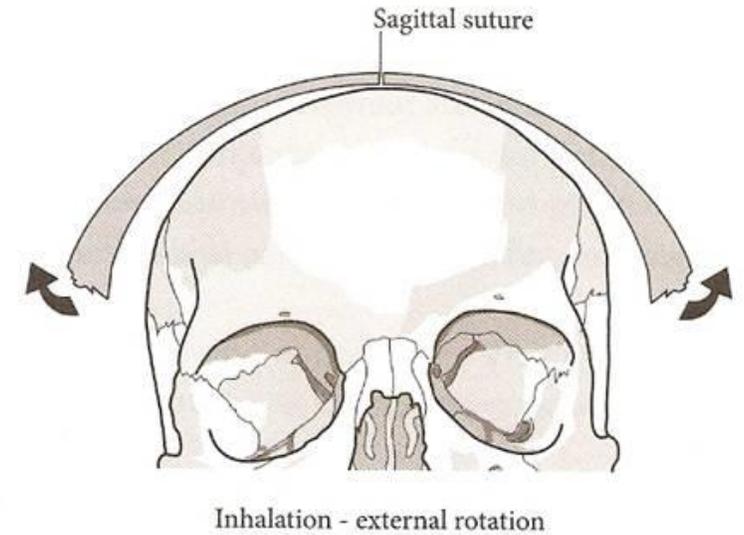
Descending colon

**PRACTICE FOR THESE
TECHNIQUES**

USING OMT IN TRAUMATIC BRAIN INJURY AND NEURODEVELOPMENTAL DISORDERS

Brain injury may occur as a result of anything from severe motor vehicle accidents to minor concussions from sports injuries. Dental procedures, birth trauma and simply striking the head may result in dysfunctional pattern in cranial motion. The goals of treating cranial dysfunctions are to:

1. Normalize nerve function
2. Counteract stress-producing factors by normalizing stress absorbing areas like the thalamus and pituitary
3. Decrease or eliminate circulatory stasis
4. Normalize CSF flow
5. Release membranous tension
6. Correct cranial strains
7. Modify gross structure patterns



The primary respiratory mechanism described by W.G. Sutherland, D.O., is a complex physiologic center, located on the floor of the fourth ventricle, which depends on the function of the central nervous system.

The five components of the PRM are:

- Motility of brain and spinal cord
- Spinal fluid flow
- Mobility of intracranial membranes
- Articulation of the cranial bones
- Involuntary mobility of the sacrum

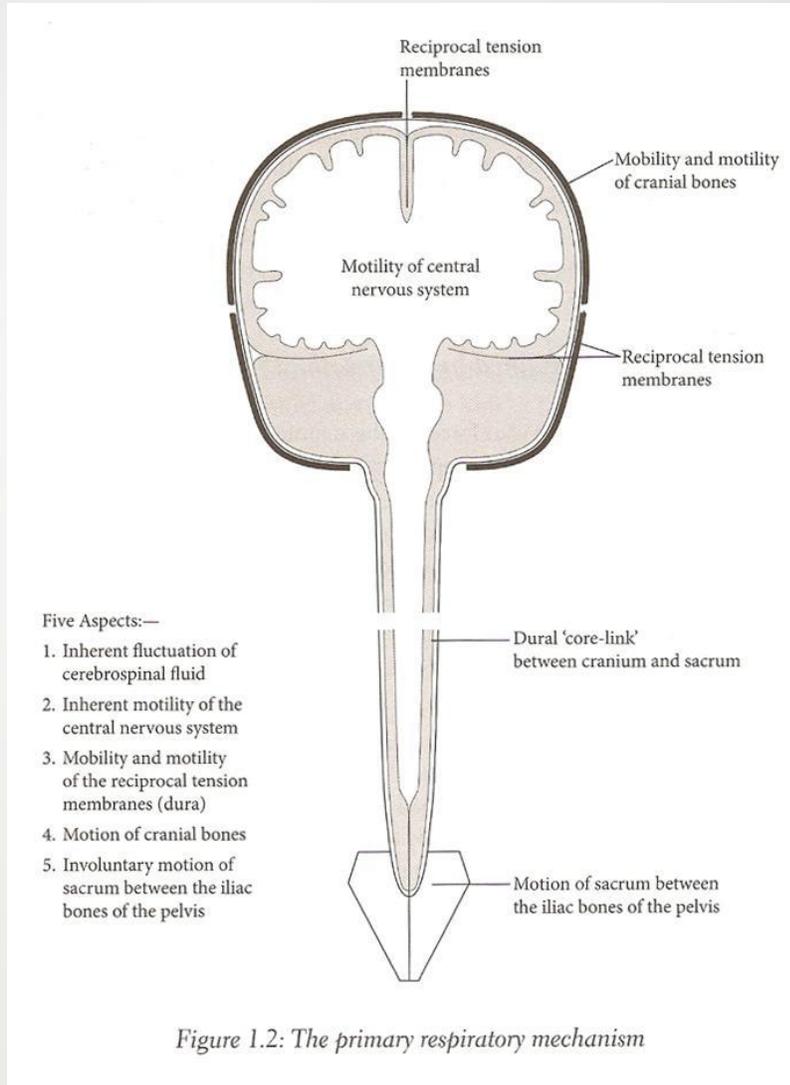


Figure 1.2: The primary respiratory mechanism

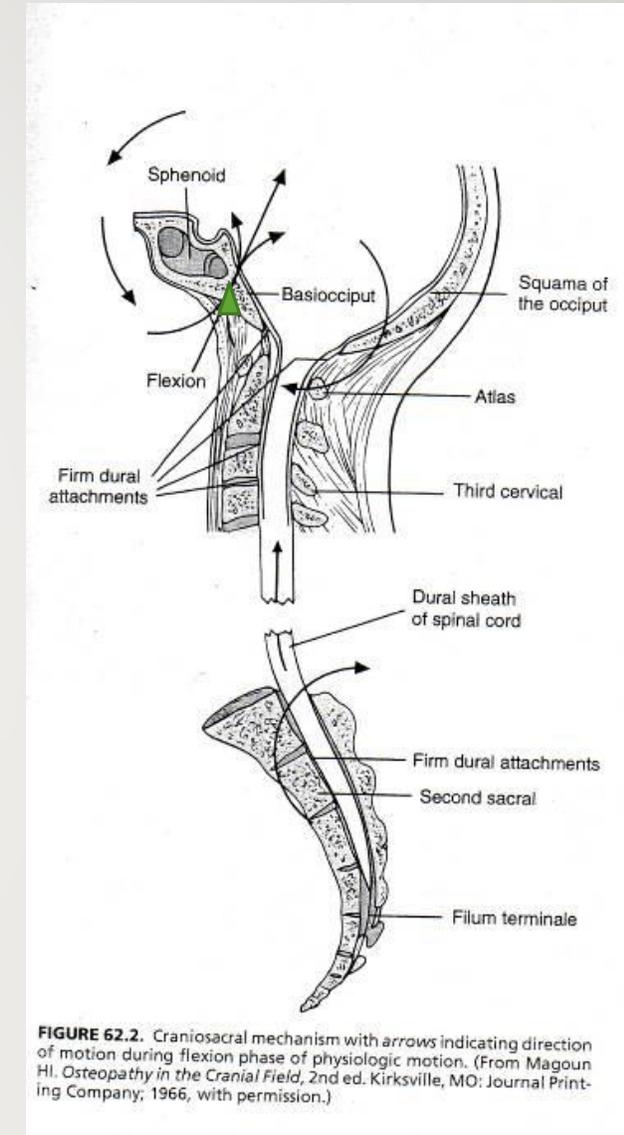


FIGURE 62.2. Craniosacral mechanism with arrows indicating direction of motion during flexion phase of physiologic motion. (From Magoun HJ. *Osteopathy in the Cranial Field*, 2nd ed. Kirksville, MO: Journal Printing Company; 1966, with permission.)

The biphasic fluctuation of the motion of the cranial bones is referred to as the cranial rhythmic impulse, or CRI. The rate and amplitude varies with illness types and degree of dysfunction. This cranial motion occurs at the sphenobasilar symphysis or SBS.

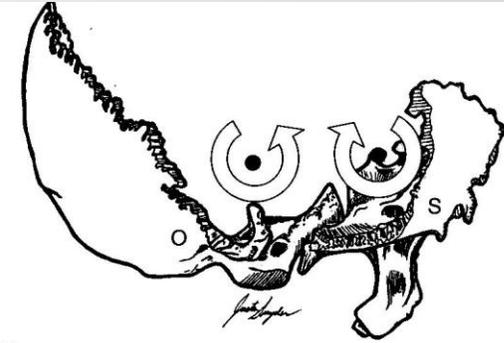


FIGURE 18.1. Flexion of the sphenobasilar synchondrosis. (O, occipital axis of rotation; S, sphenoidal axis of rotation.)

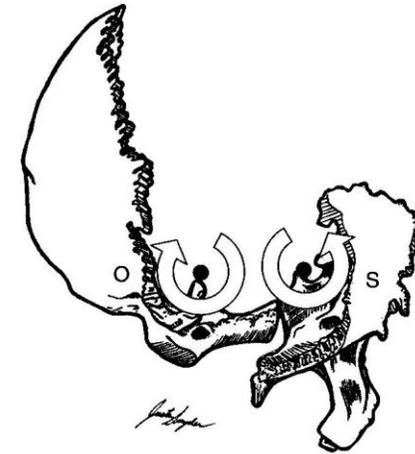


FIGURE 18.2. Extension of the sphenobasilar synchondrosis. (O, occipital axis of rotation; S, sphenoidal axis of rotation.)

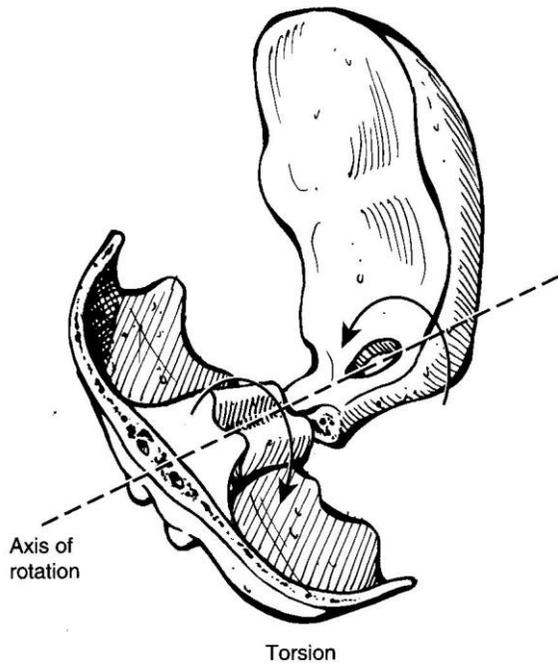


FIGURE 18.3. Right SBS torsion.

Torsion of the SBS involves the anterior posterior axis and can be found in whiplash injuries as well as following extensive dental procedures. The sphenoid and occiput rotate in opposite positions so when dysfunction is present, the greater wing of the sphenoid may feel “full” and rotate in the same direction as the occiput.

These dysfunctions occur in patients who stay in the same position constantly. Examples of this would be postoperative cervical fractures who require a halo until healed. These patients may still receive cranial therapy.

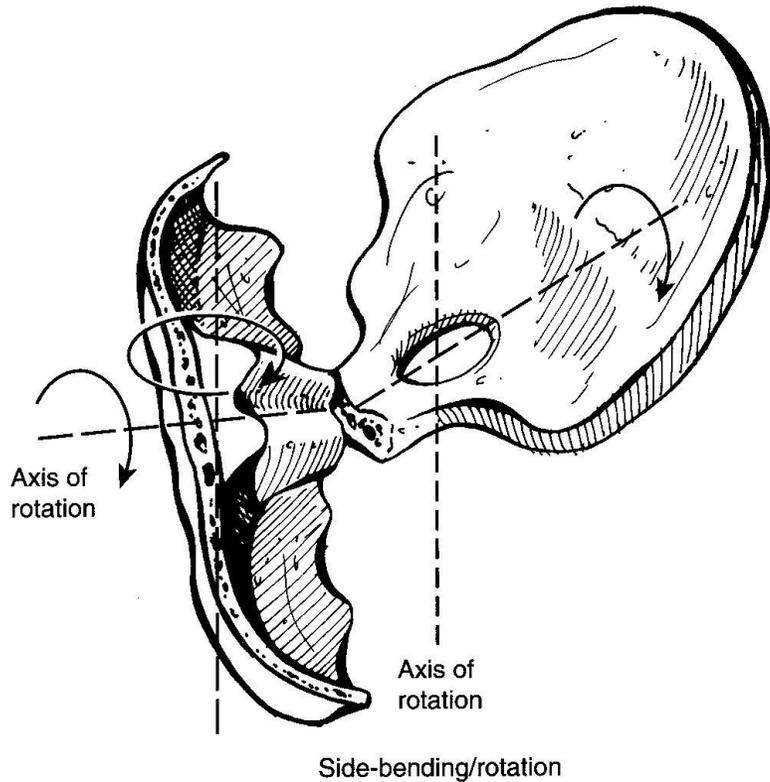


FIGURE 18.4. Left SBS side bending/rotation.

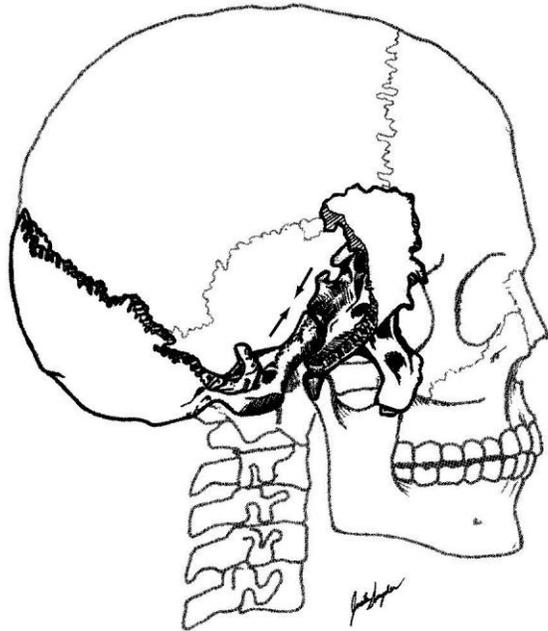


FIGURE 18.5. SBS compression.

SBS compression can be found in neurodevelopmental disorders that are both congenital and acquired. On palpation, the head feels rock hard like a bowling ball and simply has no movement. This condition may be found after neurosurgery, in persons affected by autism or chronic seizure disorders.

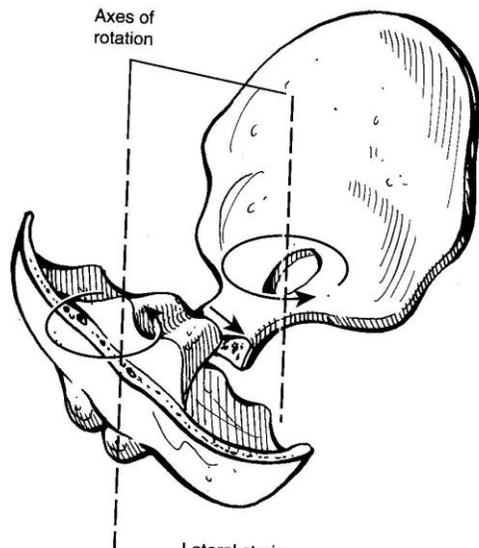


FIGURE 18.7. SBS lateral strain.

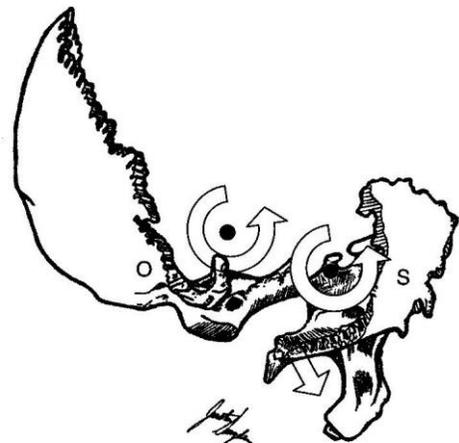


FIGURE 18.6. SBS inferior vertical strain. (O, occipital axis of rotation; S, sphenoidal axis of rotation.)

Inferior vertical and lateral strains of the SBS are seen in severe head trauma and in persons affected by cranial disorders such as Treacher-Collins syndrome and cloverleaf skull syndrome (Kleeblattschadel syndrome). These dysfunctions are difficult to treat and usually require the use of indirect techniques initially. Direct techniques may be utilized after some movement has returned. These dysfunction require treatments over week to months, depending on the length of time the dysfunction has been present.

Four techniques may be used which include direct technique, indirect technique, exaggeration and disengagement. Using respiratory assistance with these techniques may increase cranial movements during treatment. Two common holds to begin treatment are the cranial vault hold and the fronto-occipital hold. The sacrum can still be palpated although it may be difficult if a patient is in a wheelchair. The diaphragm can be palpated to evaluate the sacrum in chair bound patient.

Cranial vault hold

FIGURE 18.8. Lateral view of skull with dots for finger placement. (Modified with permission from Ref. (8))

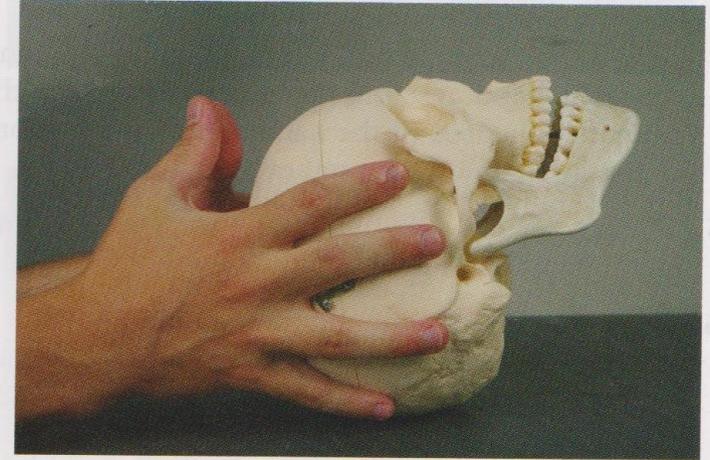


FIGURE 18.9. Steps 1 to 8.

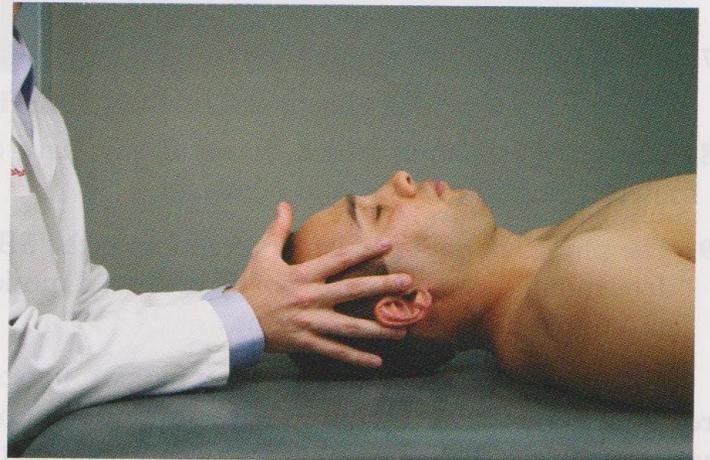


FIGURE 18.10. Steps 1 to 8.

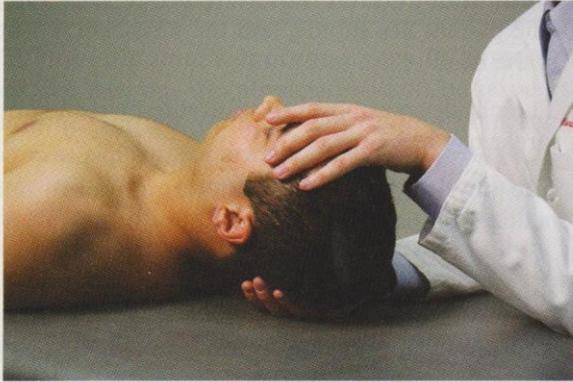


FIGURE 18.12. Steps 1 to 5.

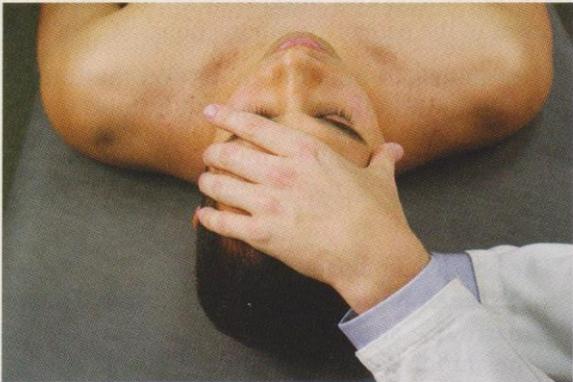
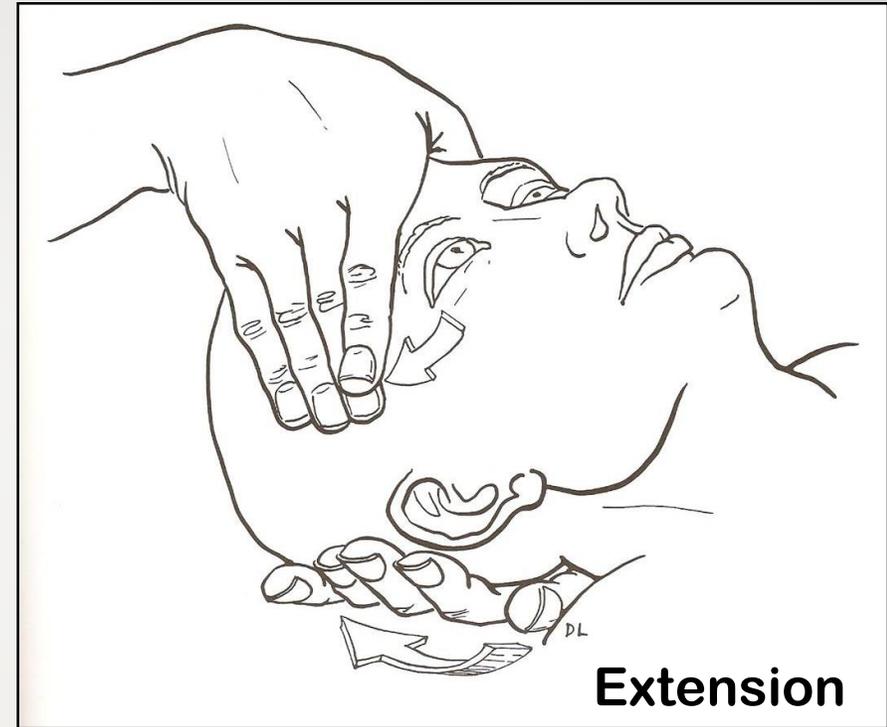
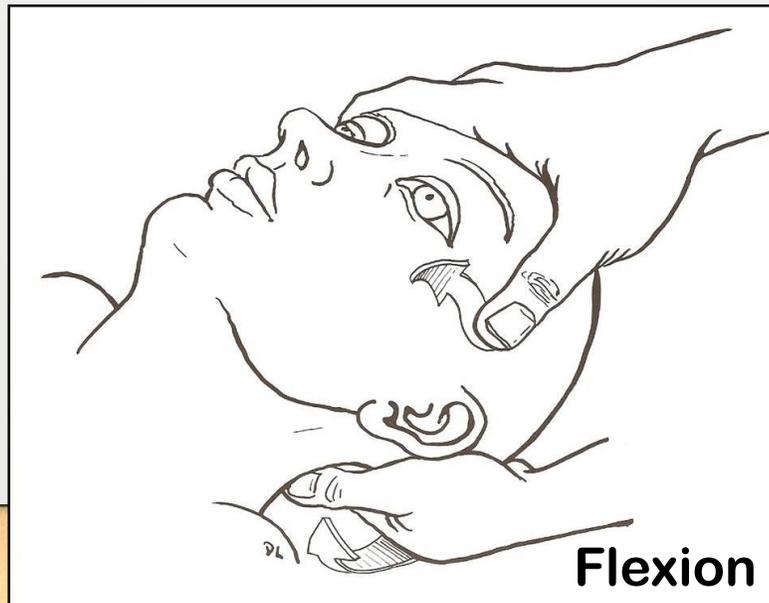


FIGURE 18.13. Steps 1 to 5.

Fronto-occipital hold is useful in SBS compression and inferior vertical strains. It can be used in all patients regardless of position.



Extension



Flexion

Parietal lift is helpful in treating the parietal bones and their dural connections. This technique is particularly useful postoperatively after the cranial bones are disrupted in surgery. This technique also helping in healing incisions from neurosurgery.

Avoid using the CV-4 hold shown here until you know the complete history of the patient.

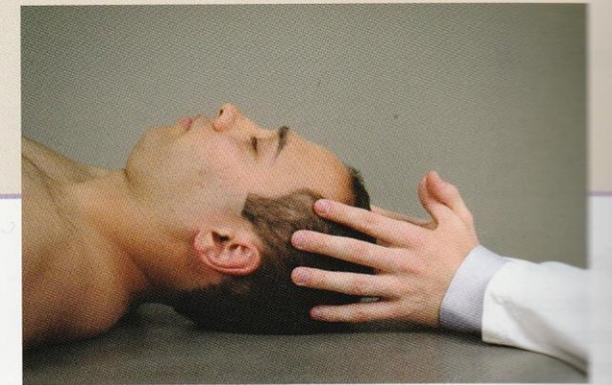
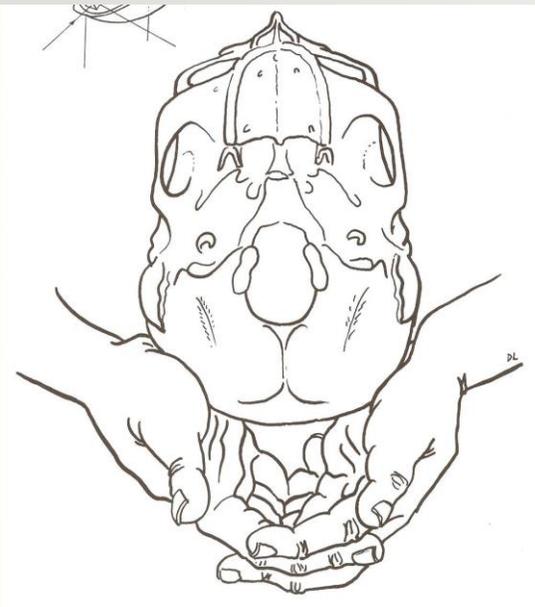


FIGURE 18.49. Steps 1 to 3.

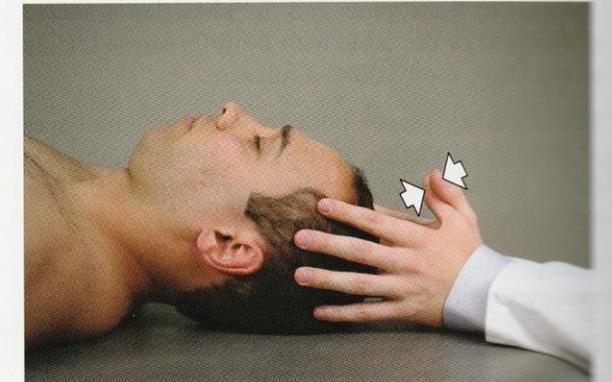


FIGURE 18.50. Step 4.

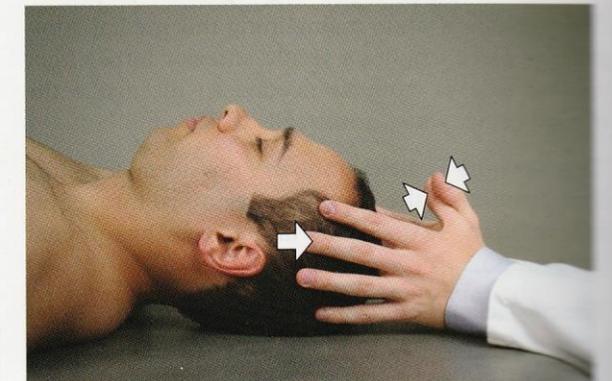


FIGURE 18.51. Step 6, external rotation of parietals.

Absolute contraindications for cranial osteopathy include the following:

- acute known or suspected intracranial bleeding**
- known increased intracranial pressure**
- any skull fracture that has not been completely evaluated, especially depressed fractures**
- intractable seizures**
- generalized bleeding disorders**
- any known space-occupying lesions**

Neurosurgery should be consulted for any of the above issues BEFORE beginning treatment with cranial osteopathy.

General precautions when treating patients having special needs:

- Be sure and get informed consent from the patient or their medical power of attorney**
- Discuss your plan of treatment with the attending physician**
- Pay attention to any equipment used by the patient that may be disrupted by treatment.**

Included are ostomy devices, endotracheal tubes, intravenous lines, central lines, feeding tubes and indwelling catheters.

Treating persons having special needs is very rewarding and can help your patients use less medication and recover in a shorter time. In persons having chronic problems patients can be made much more comfortable and make progress sooner.



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Thanks to all my patients former and future who helped me learn to treat uncommon dysfunctions.