

Sharon Gustowski, DO, MPH
Demystifying Cranial (OCMM): A Biomechanical Approach- Literature Search ~2010-2019
AOA Research Focus Track

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Examination of the Cranium for Somatic Dysfunction

Perform this exam after or concurrently with physical examinations, including cranial nerve testing and other exams of the eye, ears, nose, throat, lymphatics, ROM of cervical spine/OA joint, etc.

Observation

- 1) Observe the head for shape- flexion/extension type, gross abnormalities/asymmetries
- 2) Observe the face for symmetry
 - a. Orbits: position, size shape, etc
 - i. right/left superior, protruding, size differences, angulation, etc.
 - b. Nasal deviation
 - i. right/ left/midline
 - c. Symphysis menti deviation
 - i. right/left/midline
 - d. Ear positions
 - i. right/left superior, earlobes protruding/flat, etc.
- 3) Note any skin or scalp rashes, lesions, hair distribution as relevant, etc.

Palpation

- 4) Palpate for tissue texture abnormalities (TTA) and tenderness
 - a. Layer palpate to the musculature. (masseter, pterygoids, temporalis, suboccipital, etc.)
 - b. May also examine for CS tender points and/or dural tension
- 5) Use a Vault Contact to identify symmetry and motion. See details on p. 2.
- 6) Synthesize Findings
 - a. Determine coherence of findings with patient presentation/history and other physical examinations
 - b. Determine somatic dysfunction(s)
- 7) Documentation
 - a. Cranial rhythmic impulse (CRI) rate/rhythm/amplitude
 - b. Sphenobasilar synchondrosis (SBS) strain pattern
 - c. Bone positions
 - d. Sutural and/or dural restrictions
 - e. Segmental and somatic dysfunction of head region, M99.00

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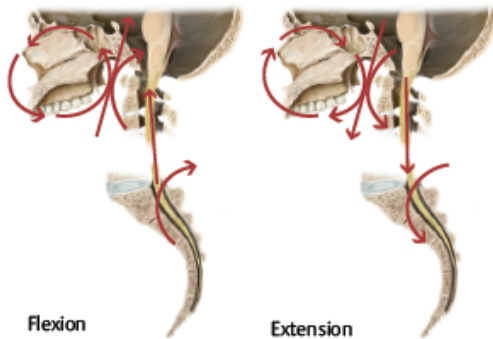


Fig. 13.1 Cranium and sacrum in flexion and extension.

Positioning and Preparation

- ▶ Patient: supine.
- ▶ Physician: seated at the head of the table with forearms resting on the table.

Tissue Contact–Vault Contact

Use the right hand to contact the right side of the patient’s head and the left hand to contact the left side (**Fig. 13.2**).

- Contact the greater wings of the sphenoid with the pads of the second fingers.
- Contact the squamous portion of the temporal bone with pads of the third fingers.
- Contact the mastoid portion (not process) of the temporal bone with the pads of the fourth fingers.
- Contact the lateral angles of the occiput with the pads of the fifth fingers.
- Allow the fingers to wrap to the contour of the cranium. Do not leave space between your hands and the cranium.

Palpation for Asymmetry and Inherent Motion

- Allow the forearms to rest on the edge of the table. Release all pressure in the fingers and keep them relaxed, so they can be pushed by the inherent motion of the cranial bones.
- Gently layer palpate to the external periosteum.
- First observe the position of the finger contacts for symmetry. Positional asymmetry is a clue of underlying cranial somatic dysfunction.
- With fingertips relaxed, allow the inherent cranial motion to push against your fingers. When palpated, follow this motion with your fingers. Do not guide the bones.
- Observe cycles of flexion and extension, noting the rate and amplitude.
 - Note that in cases of SBS compression, no motion is palpable, or the motion is discordant.
- Gently layer palpate to the dural layer, then centrally to the SBS. Identify whether or not a strain pattern may be present.
 - Passive range of motion testing can be performed by moving the hands very slightly so as to “spring” the cranium into the directions of each strain pattern at the beginning of a flexion cycle, noting motion ease and motion restriction. Do not hold the hands in this position.
- Observe the cranial rhythmic impulse for a few cycles.
- Release the hand contacts at the beginning of a flexion cycle.

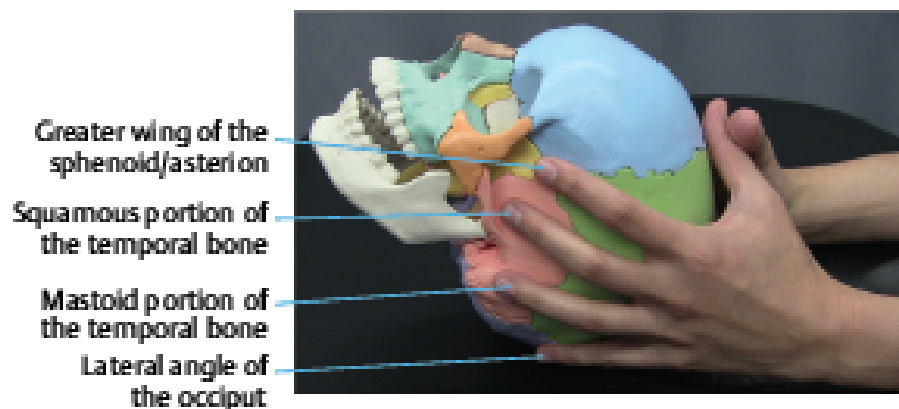


Fig. 13.2 Vault contact.

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Head, Occipitoatlantal Joint Decompression

Head, Occipitoatlantal Joint Decompression



Method: Direct

Different from other techniques for the occipitoatlantal (OA) joint, this technique is focused on the inherent flexion and extension motions of the occiput and cranial dural attachments along with passive range of motion restrictions (Fig. 13.5). This technique is especially useful in newborns. It may also be incorporated as an additional step in the OCMM: venous sinus drainage technique.

Key Elements

- Somatic dysfunction corrected: any OA joint somatic dysfunction, including restriction of condylar passive range of motion.
- End goal: to restore normal occipital condylar position and inherent cranial motion of the occipital bone.

WATCH ▶▶▶

▶ **Video 131 OA Joint Decompression—Narrated**

Example Somatic Dysfunction: Bilateral decreased condylar passive range of motion

Positioning and Preparation

- ▶ Patient: supine.
- ▶ Physician: seated at the head of the table with forearms resting on the table.

Tissue Contact

Both hands perform the technique.

- Performing hands: Contact the occiput near the condyles with the pads of the second and/or third fingers. The fingers should point in the plane of the condyles. Allow the patient's head to rest on your hands.

Movements, Barriers, and Forces

Use both hands to do the following:

1. Palpate and observe for inherent cranial motion.
2. Apply gentle posterior and superior traction forces, guiding the condyles along the articular surfaces until the tissue tightens at the restrictive barriers.
 - Do this by approximating the wrists and pulling the arms posteriorly. Use your forearms for leverage by keeping your wrists relatively stiff and leaning your body weight forward onto your arms.
3. Hold these forces.
4. When release is palpated, or after ~ 2 minutes, release forces but not tissue contacts.
5. Retest the OA joint for changes in position and passive range of motion.
6. Retest the cranium for changes in inherent motion.

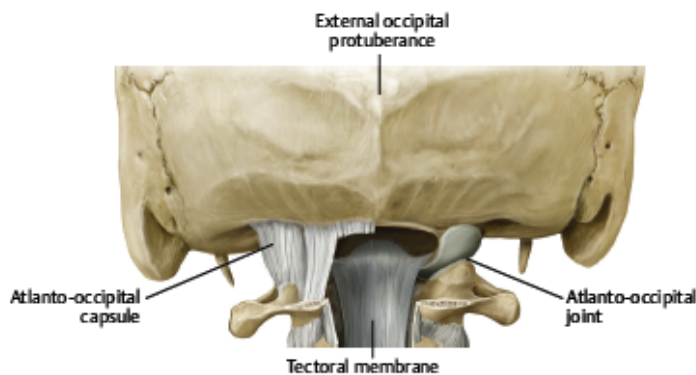


Fig. 13.5 Occipitoatlantal joint.

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Table 13.1 Clinical considerations		
Indications	Contraindications	Precautions
Headaches Cranial nerve entrapment syndromes Minor head trauma, including postconcussion Infectious diseases: sinusitis, otitis media, upper respiratory tract infection, labyrinthitis Dental-related disorders: trauma after dental work, malocclusions Temporomandibular joint disorder Vertigo Tinnitus Ocular dysfunctions, such as strabismus Infants with plagiocephaly, torticollis, colic, latching or nursing difficulties, history of difficult delivery	Recent trauma with significant or serious injury to the brain, blood vessels, cranium, or other related structures Severe infections, such as meningitis or encephalitis Elevated intracranial pressure Cerebral edema Recent shunt surgery or neurosurgery Epidural or subdural hematoma Recent hemorrhagic stroke	Congenital cranial bone or brain malformations Brain or other intracranial tumor Shunt, coil, or other intracranial implanted device Use cautiously in patients with orthodontic appliances. Note that orthodontics can restrict cranial motion, rendering cranial techniques less effective. Also, orthodontic appliances may not fit properly after cranial techniques are performed.