Osteopathy Treatment for Eric S

Part 2, by Margaret F Ronis, O.D. and

John Glenn, student of osteopathy,

Canadian College of Osteopathy

- Osteopathy is a healing art. The core tenets of osteopathy make it very clear that a lesional chain is unique to that person. Generalizations are starting points. How the anatomy and physiology are affected from each experience is where the art of palpation comes into play. From an osteopathic perspective, each trauma be it impact-related, repetitive strain oriented, or emotional in origin, meets the uniqueness of the individual, and tests that system's capacity to cope. Each trauma is unique to that patient at that moment.
- The Primary Respiratory Movement (PRM,) also called cranial motion or cranial sacral movement, has been part of the osteopathic mindset since the 1940's. The working model as originated by Dr. William Garner Sutherland, D.O. (USA) is that at the first spark of life a "rhythmical" driving force develops and guides embryological formation.
- Physiological axes manifest and motion occurs around these axes. Every organ, bone, and tissue matrix "expresses its vitality" (rhythmical drive) through the PRM and a given structure's axis. A healthy rate and amplitude remain the same regardless of the structure. It is has been seen under a microscope that cells can expand and contract 2 ½ times a minute, 12 seconds in, 12 seconds out. Every structure has a respiratory movement in reference to the cellular respiration, "the embryonic blueprint."

- The term “primary” was used by Sutherland to differentiate it from cardiac and pulmonary motion (which occur later in fetal development.) The first spark of life is fluidic. It is considered *primary* as it precedes cardiac and pulmonary development. It remains a guiding principle through all embryonic stages of formation. Osteopathy colleges teach that “Primary respiration” is hardwired into the organization of the embryological development and the path of self-correction and wellness.

- When there is no PRM present, or if there a decreased expression of its vitality palpated, there is a cause somewhere within the system. In the case of impact trauma, the inertial forces may have been too much for the Autonomic Nervous System (ANS) to mediate or the local anatomy may have been overwhelmed by the inertia of the impact. These physiological axes may have been affected and the result may be a lesional state where no motion or expression of vitality is present. In osteopathy this is called a “lesion” or a “traumatic lesion”. The etiology of an osteopathic lesion could be blunt trauma, emotional trauma, repetitive motion strain, or viral/bacterial overload.

- **Description of Episode 1: Anatomy of the accident:**
- There are protection guard (survival) reflexes that come into play following a whiplash:
- The first response in the case of a non-complex frontal impact (from a motor vehicle accident) involves a rapid cervical flexion motion created by the inertia of the impact. The ANS (in particular the reticular activating system) causes a strong contraction of the posterior sub-occipital muscles to protect the neurology and the vasculature that enters and exits the cranium. Brain, cord, and oxygen are vital for survival. After this, the ANS sends the message to lock down the posterior sub-occipital muscles and thus protect the arterial pathways to the brain. The dural connections at the level of the sub-occipitals are stressed as the inertia passes through the body while the neurology is trying to keep the person alive. The myo-dural bridge (MDB) (see slide) shows a direct connection between the dura that surrounds the brain and the sub-occipital musculature. Note the tentorium cerebelli (see slide.) From external to internal, the dura at the level of the MDB travels from the center of the sub-occipital muscles, enters the cranium, and joins the occipital dura. There is an intimate relationship with the brainstem.

- The tentorium cerebelli (considered as a diaphragm by many in osteopathy,) horizontally bisects the brain, attaches to the temporals, is heavily invested at the sphenoid (including all of its foramina) and attaches itself to the clinoid processes of the sphenoid.
- The vertical component of the dura, the falx cerebelli and cerebri travel anteriorly from the tentorium ending at the crista galli of the ethmoid. In osteopathy, this is called a “reciprocal tension membrane” as tensions from one aspect of the dural system can put a drag and tension on the entire intra-cranial dural network. Keep in mind that the dura also has hard attachments at the foramen magnum, C1, C2, and the second segment of the sacrum. Tension along the neural network can translate throughout its entirety.

- In whiplash, the sternum slams against the seatbelt. The cervical and upper thoracic spine rapidly rotate around it in forced flexion. This can cause contraction in the chest and a tightening around the heart, which can create tension patterns and trauma responses at the level of the pericardium.
- In concert, the supra- and infra- hyoid musculature locks down, in attempt to protect the airway. The fascial networks of the pericardium are directly connected to the diaphragm, the sternum, the heart, and 1 through 4 of the dorsal vertebrae. There are connections between the pleural dome of the lung, the scalene muscles, the thorax, the anterior cervical hyoid musculature, and the jaw. The dura also surrounds the optic nerve. Fascia surrounds everything.

- In osteopathy, there is a saying that **“ the entire body is suspended from the optic nerve.”** This is in part because of the dura and its direct attachment to the entire fascial body. Embryologically, fascia was the gliding mechanism that allowed for migration. The fascia remains. It is part of a fascial continuity that is not appreciated outside the osteopathic model.
- **First visit:** No PRM was found. Protection guard reflexes were palpated from the pericardium (seat belt) up the cervical fascia chains into the cranium. He suffered from cervical spine sensitivity, sub-occipital sensitivity, and spasm. He had ocular dysfunction and dizziness.
- Treatment: Cranial osteopathy, “non manipulative” approach, primarily cranial unwinding and trauma vector releases. The physiology slowly begins to respond, and tissue structures start to release one layer at a time by themselves, using both unwinding and functional approaches.
- 2 sessions. Issue resolved.

- **Description of Episode 2: Anatomy of the Accident:**
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- The same patient performed the Heimlich maneuver on an employee who was having difficulty breathing because he had something stuck in his airway. The pressure from the force of the maneuver (which involved a thrust maneuver while contracting his own diaphragm) seemed to have an effect on his respiratory diaphragm, thoracic/pleural dome, and tentorium cerebelli. (see slide) All are considered diaphragms within osteopathy. The pelvic-cranial connection is the Dura. The anatomical pathways to consider are: Phrenic nerve (of the diaphragm), Vagus nerve, mid-cervical fascia, and jugular foramen. A small portion of the Vagus nerve connects with the vestibular system.
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- **First visit:** He presented with nausea, dizziness (Vagus and Phrenic nerves, and ocular dysfunction).
- Treatment: Similar to the first episode.
- 2 sessions. Issue resolved.

The treated structures included pericardial ligaments and visceral motility, diaphragm, pretracheal and deep cervical fascia and its connection with the pharyngobasilar fascia. The pharyngobasilar fascia brings us to the SPHENOID and the structures which pass through its forThe treated structures included pericardial ligaments and visceral motility, diaphragm, pretracheal and deep cervical fascia and its amina and chiasms, the occipital dura, the tentorium, and the tissues of the oral cavity and structure of the temper-mandibular joint This has a connection to the mid-cervical and deep cervical fascia, the fascia of the scalenus muscles, pleural domes, pericardium and associated ligaments including the phrenico-perucardial ligaments which attach directly onto the central tendon of the diaphragm. He also treated the superior cervical ganglion.

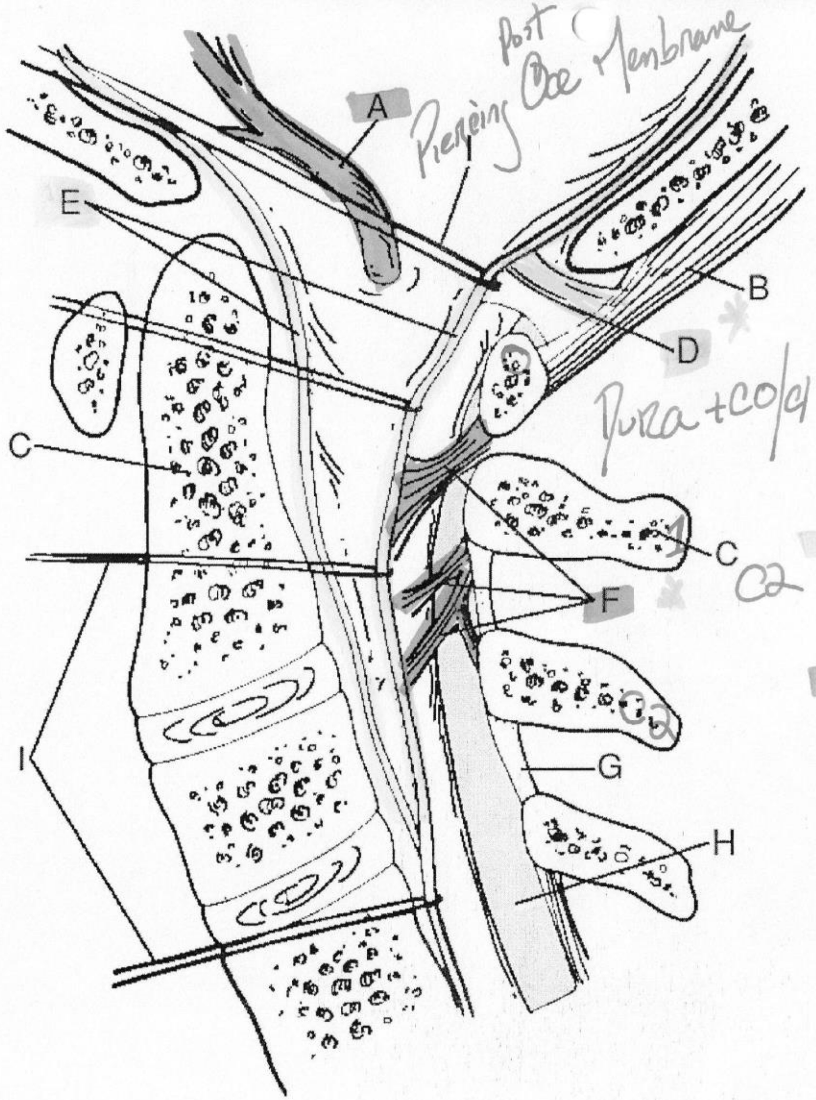
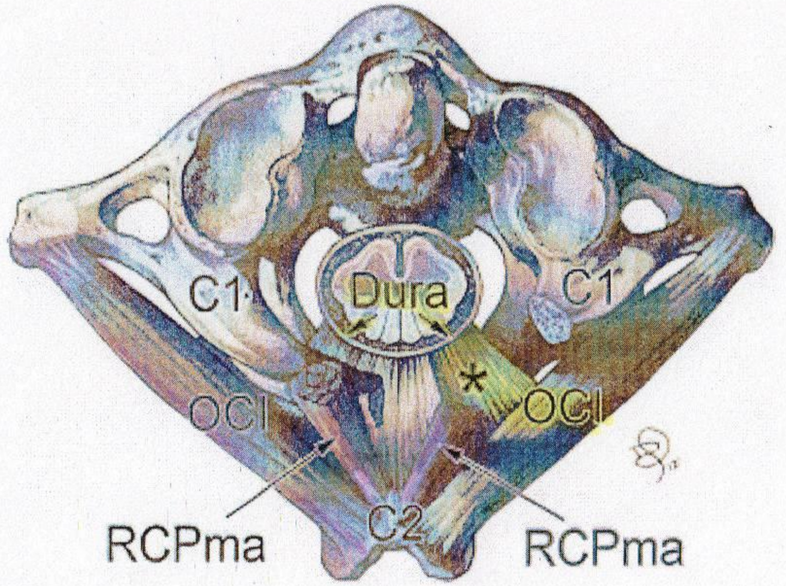


FIGURE 15-2 Hemisected head and neck specimen with brain and spinal cord removed. Posterior part of the dural sac has been pulled ventrally. **A:** Vertebral artery. **B:** RCPm muscle. **C:** axis. **D:** RCPm muscle attachment to Dura mater. **E:** Dura mater. **F:** Craniale durae matris spinalis fibrous strands. **G:** Ligamentum flavum. **H:** Epidural space. **I:** Suture material. (Modified from Rutten HP, Szpak K, van Mameren H, et al. Letters. *Spine* 1997;22(8):924.)



A/A interspace

Illustration depicts a superior to inferior view of the first and second cervical vertebrae. The posterior arch of the atlas (C1) is sectioned in order to illustrate the myodural bridge of the atlantoaxial interspace (*)

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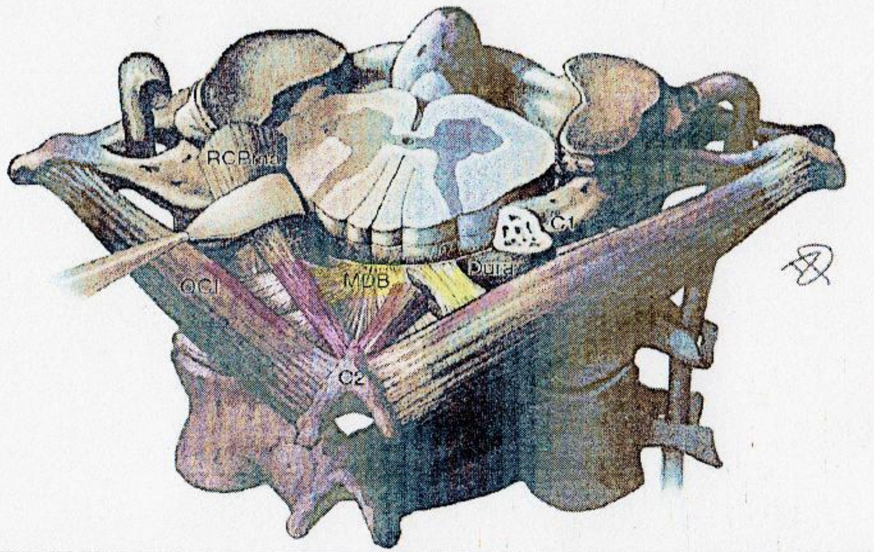

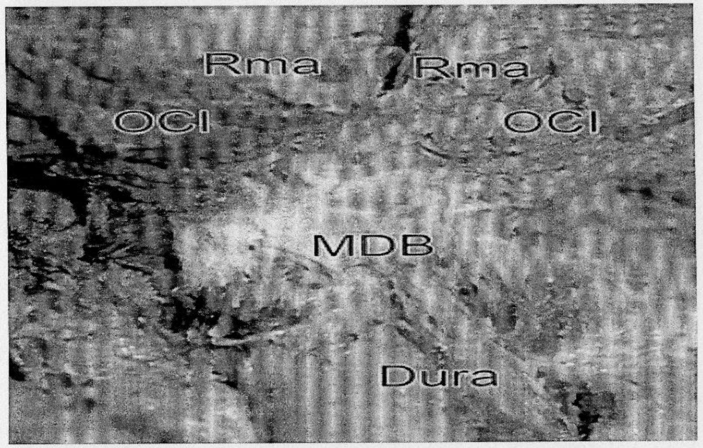

Photographic evidence of the atlantoaxial myodural bridge (MDB) between the rectus capitis posterior major (Rma), obliquus capitis inferior (OCI), and the cervical dura mater (Dura) in a cadaveric specimen post-laminectomy.

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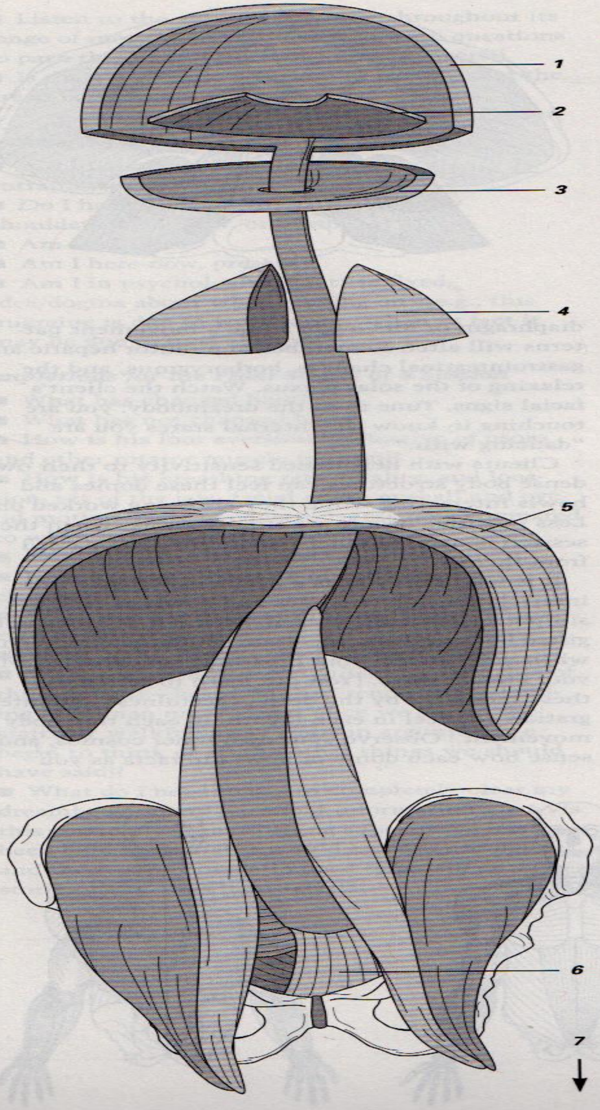
he dense body finds its mechanical balance, as
ll as its torsional pliability and stiffness,
ough these domes and bowls. The dense body
s not deal in a language of straight lines and
nt-angled structures; everything curves, however
tly. These eight domed or bowled structures
eract with each other in complex, interdepen-
t ways, as motile, mobile, muscular, osseous,
l fascial reciprocals, one to the other.
Another way to visualize the body begins with
nple shapes. The trunk is a tube, and the arms
l legs smaller tubes. Make the head an ovoid,
ting on top of a smaller tube, the neck. The
nal cord is then a tube within a tube, with the
nal dura yet another tube. Or, simpler still,
ke the head a box, sitting on top of a long recti-
ear box, the trunk, whose sides are formed by
r primary vertical planes. Now add the linear,
pezoidal, and oblique dorsal muscles and the
aight, curved, and divergent ventral muscles. If
u can hold this visualization in your mind's eye,
u have begun to master "mechanical
rception."
The respiratory diaphragm is crucial to all mean-
gful work, whether with the hands or inner eye,
it forms the main midpoint structure of the
dy and is located at the transition point of many
tential restrictions in movement. And, of course,
makes its own profound contribution to move-
ent through its structural stiffness, respiratory
otion, and ability to cope with torsional stress. It
strongly connected to all four walls of our theo-
tical rectilinear box, and attaches to or intermin-
es with a tube within the tube, the spinal dura,
a the three crural ("little leg") attachments to the
terior and lateral surfaces of the vertebral bodies.
The respiratory diaphragm is connected to or
terfaces with the psoas muscles, the peritoneum,
e ribs, the abdominal wall, the pleura, and the
ediastinum, and is invested with the peri-
rdium. This last is of potentially vital impor-
nce in craniosacral work: it means that the field
the heart may determine the precise motion
ttern and "electrical status" of the diaphragm.
hus the heart may go some large way toward
fecting how the diaphragm pulls on the tube
self – the trunk – and on the tube within the
be, the spinal dura. Andrew Still was fascinated
the diaphragm, and devoted much of his ses-
ons to working with it.
Bear in mind the torsional forces delivered to
d acting on the sacrum and cranial base from all
e other transverse diaphragms – especially in
ysfunction. Track and respond to releases at the
ther levels whenever you feel them. It does not
atter so much exactly where your point of inter-
ctive contact is – whether the respiratory



The seven bowls and domes of the body
1 Dome of skull
2 Dome of tentorium
3 Bowl of cranial base
4 Dome of apex of lungs
5 Dome of respiratory diaphragm
6 Bowl of perineal diaphragm
7 Bowl of soles of feet (not shown)

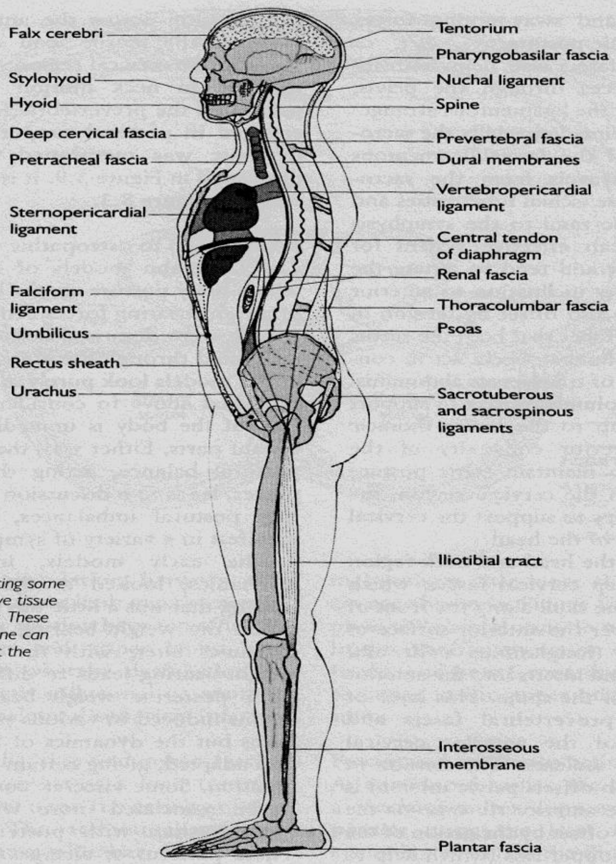


Figure 8.3

A lateral view of the body indicating some of the main fascial and connective tissue structures that support the body. These tissues are interconnected and one can observe them passing throughout the body as a continuous system.

'Revisionist osteopathic schools' and the modern orthodox study of biomechanics are now coming to a similar concept of whole-body mechanics and postural stability, through looking at how the body is arranged and how its structures can dissipate force, if the posture is well maintained. Eventually, we should all be speaking the same language!

Whole-body mechanics and upper limb function

For the purposes of this chapter, the point of the above discussion is to set the stage for the idea that the general posture of the person can be influential to shoulder girdle activity and hence upper limb function. For example, if trunk stability

Figure 14.18 The orbital veins (lateral view) and their relations with the cavernous sinus and the facial veins

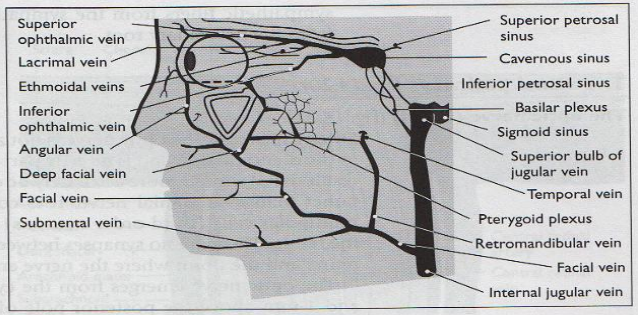
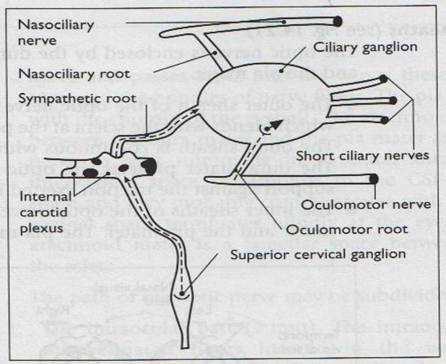


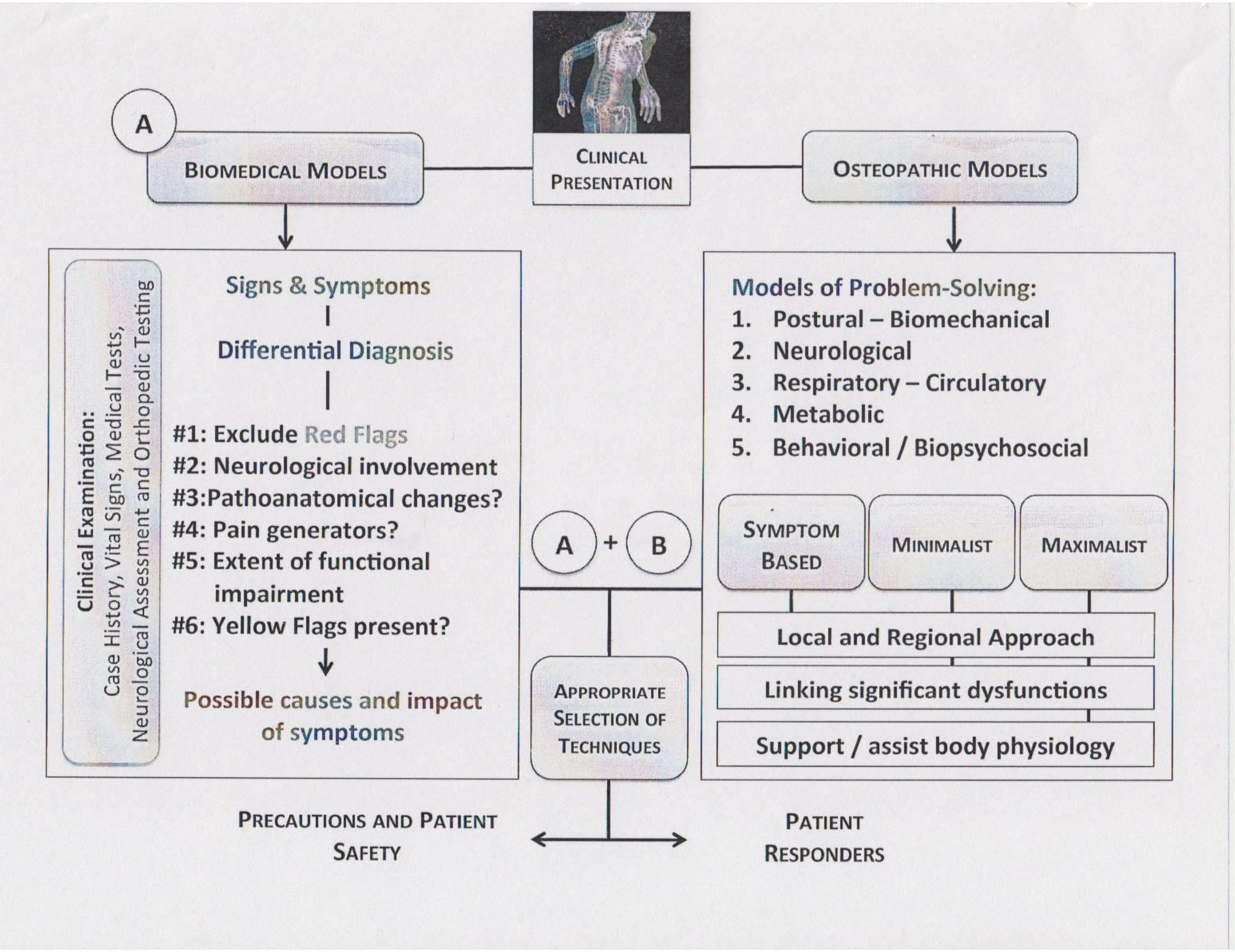
Figure 14.19 The ciliary ganglion



the perikarya of the postganglionic parasympathetic nerve fibers and innervates the ciliary muscle and the sphincter pupillae muscle.

It has connections to the:

- Oculomotor nerve (CN III): the preganglionic fibers of CN III pass via the oculomotor root to the ganglion where they are relayed.
- Sympathetic nervous system: the sympathetic root from the internal carotid plexus (arriving from the superior cervical ganglion) bypasses the ganglion without being relayed and innervates the dilatator pupillae muscle and the tarsal muscle.
- Ophthalmic nerve (CN V1): via the nasociliary root, sensory fibers travel from the eye to the nasociliary nerve (without being relayed).
- Eyeball: via the short ciliary nerves; they contain postganglionic parasympathetic fibers from the ganglion, postganglionic



Clinical Presentation
A
Biomedical Models
Osteopathic Models
Clinical Examination:
Case History, Vital Signs, Medical Tests,
Neurological Assessment and Orthopedic Testing
Signs & Symptoms
Differential Diagnosis
#1: Exclude Red Flags
#2: Neurological involvement
#3:Pathoanatomical changes?
#4: Pain generators?
#5: Extent of functional impairment
#6: Yellow Flags present?
Possible causes and impact of symptoms
Models of Problem-Solving:
1. Postural – Biomechanical
2. Neurological
3. Respiratory – Circulatory
4. Metabolic
5. Behavioral / Biopsychosocial
A + B
Symptom Based
Minimalist
Maximalist
Local and Regional Approach
Linking significant dysfunctions
Support / assist body physiology
Appropriate Selection of Techniques
Precautions and Patient Safety
Patient Responders

Thank you