The Craniosacral Rhythmic Impulse

by Don Cohen, D.C.

s chiropracte
We believe
our job is to
function. E
nervous sys

s chiropractors we treat the nervous system. We believe that healing is inherent and that our job is to remove interference to nervous function. But what is the function of the nervous system? Can there be interference

with nervous function besides at the intervertebral foramen? What is innate intelligence and what is it doing? How did the subluxation manifest in the first place, and why when we remove it does it return? These are some of the questions that arise. Chiropractic philosophy offers some potent insights into nature, and in other ways presents limitations that sometimes would keep us locked in the speculative framework of late-19th-century thought.

The craniosacral system is the structural aspect of the central nervous system. It represents a "big picture" view that allows us to consider the behavioral aspects of the CNS organ and its manifestations throughout the body. While the idea is derived from our cousin osteopathy, it is a sound physiologic concept and deserves consideration. It includes all of the structural components of the spinal subluxation complex and helps to shed some light on the nature of that phenomenon.

The word chiropractic means "hands-on." Traditionally we have applied our hands to the spine because it represents a bridge between the brain and the body. But there are other conduits between the two as well. The craniosacral system offers us the opportunity to work directly with the cranial nerves, including the spine's quiet counterpart the vagus, as they exit the foramina of the skull. In this way we can also more directly interact with the special senses. It offers a pre-foraminal approach to the spinal cord and nerve roots. And most importantly, it allows us directly to perceive and influence the structural configuration of the brain itself in its relationship to the body architecture, and gives us hands-on access to the interface between body, mind, and emotion. For those of us who subscribe to the unity of structure and function, this represents a significant opportunity.

Actually, the craniosacral system has been recognized in chiropractic for generations and is the basis of DeJarnette's SOT. We will consider here some physiologic aspects of the nervous system and will offer a simple,

direct and non-dogmatic introduction to the palpation of neurologic motion.

The fluid model

The craniosacral rhythm is a brain-generated fluid pulse that emanates from the central fluid core structure (ventricles) outward. "From the inside out, from the top down." Upledger theorizes that the origin of the rhythm is the intermittent proliferation of CSF by the cells of the choroid plexus, and has identified proprioceptive neurons from the sagittal suture to the ventricles which may control this function by feedback mechanism. As the choroid plexus function fluctuates, the CSF hydrostatic pressure also fluctuates, at a normal rate of 6-10 times per minute. This pressure gradient wave drives the circulation of CSF rhythmically through the brain tissue from the ventricles outward to the subarachnoid space. Thus the choroid plexus is the "heart" of the brain.

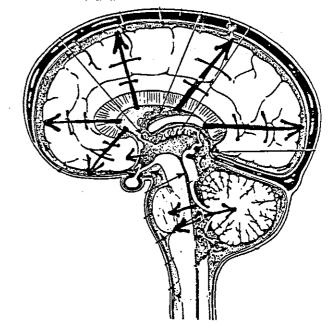


Figure 1. One-way CSF flow through the brain matter

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The CSF also circulates through the foramina and other ventricles and down to the base of the brain and into the subarachnoid space (SAS).

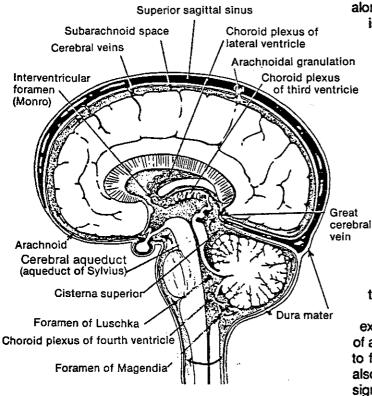


Figure 2. CSF ventricular circulation

The pressure inside the ventricles is greater than that of both the brain ECF and the SAS. This pressure gradient contributes to both circulatory routes of CSF.

The cranial membrane-suture mechanism allows CNS pressure homeostasis by the rhythmic increase of volume in the cranial vault. The expansion and contraction of the cranial tissues, both hard and soft, is transmitted via structural tissue integrity through the nervous system and whole body.

Physiologic motion: motility

Physiologic motion is the motion inherent to life. All organisms and living functional units demonstrate inherent motion. Gross forms of physiologic motion include those of breathing, cardiovascular rhythm, and peristalsis. There are also more subtle forms of physiologic motion. The unit of physiologic motility is the fluid-filled membrane sac, which exists repeatedly as a structural theme of the organism from the gross to the microscopic. Motile units include the whole body, fascial fluid compartments (including the meninges), organs within their capsules, cells, etc. Besides functioning as an expression of aliveness, physiologic motion plays a vital role in the movement of fluids throughout the body.

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The CRI, generated bilaterally by the two lateral ventricles and by the bilateral pattern of the falx membrane, the brain and the body, represents the inherent motion (motility) of the neurons which is transmitted through the fluid and membrane structure of the musculoskeletal system along the longitudinal axis. It has been noted that the CRI

is not present in body structures that have been denervated, for example when the spinal cord is severed.

When the CNS encounters input to which it must adapt or which requires change or the processing of new information (stress), it ceases to process its workload so as to integrate the input. This can be palpated as a pause in the motion of the unit, a shutting down of the CRI (a still point) which according to our model represents a suspension of the rhythmic choroid plexus production of CSF and often correlates with the changes detected by polygraph.

The body demonstrates polyrhythmic activity.

The EEG and EKG rhythms readily demonstrate this principle, as do the cardiovascular and breathing functions. There are also myriad rhythms in various tissues and at different "levels." The craniosacral rhythm represents a slow, unifying wave pulsation through the tissues.

The parallels to music are apparent. It is the subjective experience, conscious, "subconscious," and autonomic, of all rhythmic activity in an organized way that allows us to function harmoniously. Disharmony and discord are also dysrhythmia. The harmony of all pulsation and signaling in the body is a subjective experience and cannot be deduced from the component parts. It represents the organism's ability to organize in counter to the tendencies toward entropy (stress). As an expression of adaptive reserve, or vitality, the CRI represents the harmony of function.

Normal physiologic motion: flexion and extension

The terms flexion and extension are used to designate the two phases of craniosacral respiration. Craniosacral flexion and extension bear no direct relationship to the approximation of flexor and extensor surfaces of the limbs and torso, but represent the "systolic" and "diastolic" phases of CSF production. There are approximately 10 CRI cycles per minute, each cycle including one flexion and one extension. The two CRI phases can be palpated in all the body's structural components: the cranium, the sacrum, and on the limbs and torso, as a subtle urging motion.

Cranial flexion and extension

This refers to the expansion and contraction of the cranial vault and facial structures in response to the fluctuation of the CSF pressure. The motion is subtle and its extent can be imagined from the observation of sutural

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ROM, keeping in mind that the sutures are occupied by cartilage. The motion is felt as an impulse rather than a gross movement. In cranial flexion (choroid systole) the skull widens and shortens. In cranial extension (diastole) the skull lengthens and narrows.

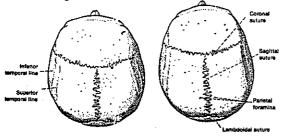


Figure 3. Cranial flexion and extension (exaggerated)

The sutures: joints

The inevitable fusion of the adult skull has long been accepted anatomical dogma. The craniosacral model refutes this concept as its basic premise, and instead presents a concept of the sutures as joints which retain integrity of motion throughout normal life. Like all joints, the undulating interdigitations of the cranial sutures are designed to facilitate certain motion and to restrict other motion, thus fulfilling dual functions of providing both stability and motility. Sutures are unique to the skull and are classified as fibrous joints.

Sphenobasilar mechanism

The junction of the sphenoid and the basilar portion of the occiput, just anterior to the foramen magnum, is the functional fulcrum of osseous cranial motion. The joint, a synchondrosis, acts as a subtle gear-hinge, with the sphenoid flexing anteriorward and the occiput flexing posterior.

The cranial base is closely associated with the spinal column because it evolves embryologically with the column from cartilage derived from the notocord. This has been traditionally interpreted to signify that the sphenobasilar hinge is the primary motivation of the CRI while the cranial vault, derived from embryologic membrane, simply accommodates the motion. The "pressurestat" model of fluid wave generation by the choroid plexus attributes the primary motivation of the CRI to non-osseous origins.

Temporals

The design of the temporal bones provided the original inspiration for Sutherland's concept of cranial bone motion. The temporal sutures are "beveled like the gills of a fish" and the bones swivel around a rotatory horizontal axis in a spiraling fashion that in flexion flares the anterior aspects laterally, like gills, and approximates the mastoids. The motion of the temporals reflects the "rams horn"

configuration of the lateral ventricles.

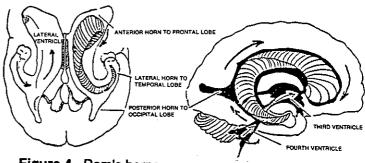


Figure 4. Ram's horns

Sacral flexion and extension:

The sacral base rocks posterior (and the sacral apex anterior) with craniosacral flexion and anterior (sacral apex posterior) with extension.

Whole body:

Craniosacral flexion urges each half of the body to subtly rotate laterally. Each limb also rotates laterally with the flexion phase, along the longitudinal axis, and internally with craniosacral extension. These changes can be palpated but usually not observed visually, but on occasion there will be visual clues, for example in the case of a pigeon-toed child. If the hands are also turned in, the child may be fixed in craniosacral extension.

A more detailed account of osseous craniosacral motion can be found in the texts by Upledger and Magoun. BIBLIOGRAPHY

Davson, Hugh: Physiology of the Cerebrospinal Fluid J.A Churchill Ltd. London 1967

FitzGeraid, M.J.T.: Neuroanatomy Basic & Applied Bailliere Tindall London 1985

Guyton, Arthur C.: Textbook of Medical Physiology W.B. Saunders Co. Philadelphia 1976

Magoun, Harold I.: Osteopathy in the Cranial Field
Journal Printing The Cranial Academy Idaho 1976

Sutherland, William G.: The Cranial Bowl Free Press Co. Minnesota 1948 Upledger, John E. and Vredevoogd, Jon D.: Craniosacral Therapy

Eastland Press Chicago 1983

Warwick, Roger and Williams, Peter L.: Gray's Anatomy c. 1989 Don Cohen, D.C.

Don Cohen, D.C., is a 1981 graduate of Palmer College of Chiropractic-West. He has studied Craniosacral Therapy with Dr. John Upledger since 1985 and is the author of The Physiology and Treatment of the Craniosacral System: The Functional Physician Volume I, to be published in 1989. He is a member of the Adjunct Faculty, PCCW, maintains a private practice with his wife, Karen Bilgrai Cohen, D.C. in Santa Cruz, CA., and is the owner and publisher of Extension Press. Comments are welcome. What is the Big Idea? Your reply c/o Extension Press, 2110 Ocean St., Santa Cruz CA. 95060.

This is the first of three articles by the author concerning the craniosacral system in chiropractic. "The Nature of Palpation" will appear in the April issue and "Palpation of Craniosacral Motion" in the May issue of The American Chiropractor.

The Nature of Palpation

by Don Cohen, D.C.

uman physiology exists perpetually in the fluid state; that is, it fluxes constantly as it processes, moves, and copes. Palpation offers us a means by which we can appreciate physiology in the fluid state that is "totally subjective and completely reliable" (Upledger).

Passive and active palpation: the fluid nature of rhythm

Active palpation utilizes digital pressure and motion of the subject and palpator to assess parameters such as range of motion, pain sensitivity, shape, consistency, muscle tension, etc., and often induces a movement or response in the subject. The receptors for this primal function are the poinian corpuscles.

Passive palpation utilizes minimal pressure and movement so that the physiologic motion of the whole organism can be subjectively appreciated in a relatively undisturbed state. In developing appreciation of the craniosacral rhythm and other subtle motions of the organism passive palpation is the choice. Because we are perceiving wave motion through a liquid medium it is best to avoid setting any extraneous waves into motion with our palpation. Active palpation used inappropriately may also induce a defensive tension response in the neuromusculature of the subject, and this tension will tend to interfere with the tissue's ability to transmit the inherent wave activity accurately. Lastly, motion on the part of the palpator involves motor activity of the palpating hand and competes with the perception of the sensory tracts.

Palpating the continuum: gross to subtle

The body represents a spectrum of tissue density from gross to subtle. Hard tissue, soft tissue, membrane tension patterns, fluid wave patterns, and subtle energy

can all be palpated. The craniosacral rhythm represents a unifying wave pattern through the spectrum of densities. The ability to grasp the continuum of this spectrum at once, as it exists, offers us the opportunity to appreciate the patient in a way not available by any other means.

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Note: "Energy" in humans refers to behavior (activity) and to the ability (potential) to behave. Behavior may be willful, "subconscious," or autonomic. Autonomic energy (activity) tends to move in patterns (rhythm). Organized autonomic activity is the basis of good function, the "secret" of good health.

Proprioceptive and tactile palpation

There are two primary conscious sensory pathways in the CNS. The spinothalamic tract transmits exteroceptive sensations which arise from stimuli outside the self. These include pain, temperature, and objective touch. The spinothalamic fibers cross in the cord and ascend to the thalamus. This tract is also responsible for viscerosomatic sensations (pain, discomfort and hypersensitivity), and plays a role in the "gating" mechanism of pain limitation.

The dorsal column-lemniscal pathway carries conscious proprioceptive sensations which arise within the body, including sense of position of the musculoskeletal components at rest, kinesthetic sense of the body in motion, and vibratory sensation (pattern organization of touch). It also has tactile discrimination fibers which define the subjective tactile sense, including that of texture and pressure. It ascends in the dorsal columns of the cord and crosses in the medulla oblongata just before synapsing at the nuclei cuneatus and gracilis. It then proceeds as the medial lemniscus to the thalamus. Interoception refers to the autonomic ascending pathways.

There is also a third spinocerebellar pathway for unconscious proprioception, which is in intimate communication with the conscious sense. The two pathways of conscious perception provide the basis of the bipalpatory concept.

Table 1: The Spectrum of Densities

Gross.....Subtle

soft tissue

membrane tension

fluid wave patterns

Table 2: Conscious sensory routes

Tr	acts
spinothalamic	dorsal column-lemnisca
exteroception	conscious proprioception
objective touch	subjective touch (and
(stereognosis)	fine gradation)
pain (nociception)	body position at rest
thermal	kinesthetic sense
viscerosomatic	vibratory (pattern of
	pressure and touch)
poor spatial definition	spatially specific
	(homunculus)
slow (1-15 mps)	fast (30-75 mps)

The active palpating hand utilizes motor activity (movement and pressure) and sensory activity (tactile and mechanical perception) to discriminate between its activity and that of the subject, as perceived at the boundary between palpator and subject. It is a probe, its nature is to "delve into" tissue and discover information. Objective tactile discrimination is exteroceptive and occurs at the dermal and epidermal level (body surface) with the activation of tactile skin receptors.

The vibratory sense

The vibratory sense perceives organization in biphasic touch activity (rhythm). The rhythm can be binary (digital) or wave-form (analog) and may be easily organized or may seem random. Vibratory sensation ascends with the proprioceptive tracts.

The blended hand

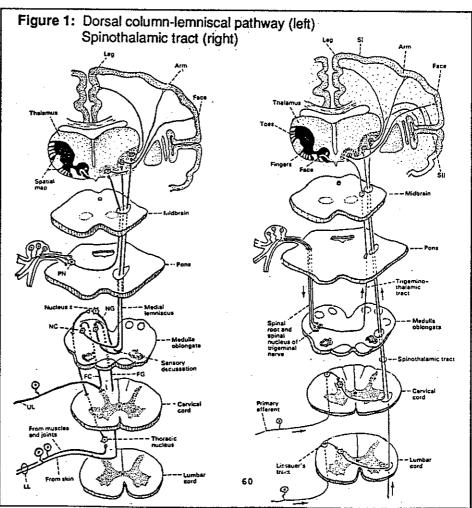
The passive palpating hand "blends" with the subject, thereby bypassing the tactile receptors. Use the proprioceptive mechanism of the wrists, forearms, elbows, and arms as your main sensory instrument. From this vantage the hand proprioceptors are also readily available, especially in the interossei and opponens muscles. When learning to palpate proprioceptively, it will probably be useful to avoid focusing on the hands at first.

It is the proprioceptive tracts that allow us to know our own body position in the dark. Most of us regard it as a sensitive and absolutely reliable system. The blended hand is by its quiet nature fully sensory, and as it is also fluid it rides with the wave pattern of that with which it is blended. In proprioceptive palpa-

tion, discriminate between one part of yourself (distal forearm/wrist) and another (proximal forearm/elbow) as a means of understanding the milieu of your subject. The dorsal columns provide us with "an instantaneous body image at the level of the somatic sensory cortex" (Fitzgerald). The development of this conscious and inherent imaging phenomenon, in conjunction with the blended hand, allows us to perceive our patient in a subjective physiologic state. The human nervous system is as complex and sensitive a sensory device as has ever been ever devised "by God or Man." There are myriad implications to the old adage "Know yourself" in this practice.

Subjectivity in palpation

Palpation is a subjective skill. Its advantage is that it is harmonious with the concept of the nervous system as a communicating system that can be communicated with. The willfulness of the human CNS is well-documented. As the experience of life, conscious and autonomic, is largely subjective it seems appropriate that this appreciation be developed. Passive palpation is listening and requires presence. Perhaps the less one says about what he palpates, the better we can trust that person's palpatory efficacy. The idea is not to give the patient advice, but to listen as the patient expresses herself, something she does inherently every moment of her life. In chiropractic we call this innate intelligence.



Training the senses

For the purpose of training yourself to utilize proprioceptive palpation, avoid the use of active palpation. The clinical practitioner of course takes appropriate advantage of both active and passive palpation, and with the acquisition of skill learns to appreciate both sensory tracts simultaneously with the motor function.

The sensory basis of motor function: the long loop

Inherent to the motor function is the concept of intent. Intentional use of the body derives neurologically from the motor cortex and beyond that from a nebulous locale, the place in us where thought originates. Afferent impulses to the motoneurons also originate from the sensory tracts as either cord reflex or "long loop" reflex via the dorsal columnlemniscal pathway to the sensorimotor cortex. In this way intentional motor activity relies on feedback mechanisms from that which we feel. The long loop pathway involves a conscious sensory tract and a conscious motor tract. (It also plays a major role in muscle testing.) Train your focus on the long loop for palpation. The implication, of course, is that in delivering care to your patient, the motor function actively relies on the proprioceptive reality of the patient's physiologic state, and this allows a more direct communication with the patient.

Palpation of poise

Poise is the resting attitude of the organism. Poise is physical (body habitus), mental (thought), and emotional (feeling). Structural poise is the way the body holds itself

at rest (in neutral), including all of the joint relationships, muscle tension patterns, etc. Poise cannot be described, predicted, or quantified; aspects of poise can be measured but are in all cases inefficient in relating the essence of its nature. Poise can be palpated proprioceptively as a spontaneous impression. Let it in. Focusing your attention on poise enables you to "lock in" to the tension pattern of your patient so that you can interact with it.

Bibliography

Carpenter, Malcolm B.: Core Text of Neuroanatomy
The Williams & Wilkin Co. Baltimore 1985
Chusid, Joseph G.: Correlative Neuroanatomy and Functional
Neurology Lange CA 1985

FitzGerald, M.J.T.: Neuroanatomy Basic & Applied Bailliere Tindall London 1985

Upledger, John E. and Vredevoogd, Jon D.: Craniosacral Therapy Eastland Press Chicago 1983

Warwick and Williams: Gray's Anatomy 35th British edition W.B. Saunders Co. Philadelphia 1973

"Palpation of Craniosacral Motion," the last article in Dr. Cohen's craniosacral series, will appear next month.

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Palpation of Craniosacral Motion

by Don Cohen, D.C.

n palpating for craniosacral motion, observe the characteristics of the waveform and also the body's tendency to transmit or resist the impulse. Be curious as to the number of agendas that the organism is attending and the nature of these concerns. This represents a kind of overview in which we ascertain the extent to which the organism is functioning as a whole as represented by the impulse of the cranial rhythm and the ease with which the tissues accommodate it. A "local agenda" will offer resistance to both fluid wave transmission (rhythmic pressure gradient) and membrane gliding.

Picture a bubbling mountain spring cascading condently and delightfully along. It fills up every nook and cranny in its course, always finding the path of least resistance to overcome every obstacle. In contrast, imagine a dammed-up and lazy river that winds through an industrial city in midsummer. Barely moving, its waters murky and thick, dusted with floating sediment and debris, and subject to stagnation and bacterial infestation, it presents a contrasting dynamic as it meanders along.

Placing your hands

When approaching the craniosacral system, place your hands on the body as quietly as possible, "as a bird alights on a twig, and then grabs hold" (Sutherland). Begin with your hands on rather than in the tissue, touching the interface between the surface of the skin and the atmosphere, between "self" and "not self." Imagine a water spider resting on the surface tension of the water. Be still and receptive. Keep your eyes open. Relax your arms and shoulders, focus on your proprioceptive circuit and listen. If you begin your therapeutic interaction with your patient in this way, you will have the wisdom of his body to assist your own. After a short time the proprioceptive tract will extend itself across your sensorimotor cortex and connect with the motor action. This is the long loop.

The listening stations

The listening stations are the various places on the The American Chiropractor/MAY 1989 body where it is natural to place the hands and listen to the inherent motion. The use of the word "listen" in this context implies passivity in your activity. "Float" your hands at the surface and feel for fluid wave patterns, pressure, and membrane tension. Suspend your elbows from your wrists and feel the motion in them. Don't judge or doubt your ability. If you think you feel it, assume that you do feel it. Learn to feel confidence without doubt and without arrogance.

Traditional listening stations are:

- 1. The soles of the feet
- 2. The dorsum of the feet
- 3. The calves
- 4. The thighs
- The ilia
- 6. The abdomen
- 7. The thoracic outlet
- 8. The thoracic inlet
- 9. The arms and hands
- 10. The neck
- 11. The base of the skull
- 12. The calvarium

The concept of listening stations is not a dogmatic one. It is appropriate to listen anywhere, but use the stations as an opportunity to listen throughout the body so that you can note relative variations from one station to the next.

Palpation of rhythms

The various rhythms of the body can be palpated at any station. Learn to recognize the nature of each and to feel it anywhere. Then practice selective focus and "wipe the slate clean" as you shift your attention back and forth from one rhythm to the next. The rhythms most readily palpable are the arterial, breathing, and CRI. The descriptions below are approximations of normal motions, and are offered as guidelines. If you feel something different, trust your perception.

1. Vascular: The cardiovascular arterial pulse is characterized as a beat (perceived as motility without

mobility) and varies from 40-100 beats per minute. Although it is conventionally monitored at the radial, carotid, or femoral arteries, it can be palpated anywhere on the body.

T.J. Bennett, D.C. in the notes of his lectures derives significance from the fact that the blood vessels in embryogenesis pulsate prior to the development of the heart, and maintains that the arteriole pulse differs somewhat from the cardiac arterial rhythm. Gray's Anatomy, 35th British Edition, comments:

"A more intimate control of the blood flow pattern through the microcirculatory units of the various tissues (vide infra) is provided by the muscular walls of the arterioles and precapillary sphincters (resistance vessels)."

This seems to indicate that the resistance vessels modify the nature of the arterial pulse and, in doing so, mediate between the rhythm of the distribution vessels and that of the exchange vessels (capillaries), which transmit one corpuscle at a time and communicate with the tissue ECF. Bennett advises that the difference is more easily explained as a qualitative rather than a quantitative difference:

"...the character of the pulse is a much better guide than the number of pulses per minute. The pulse (arteriole) is fine, thready and of low tension"

The arteriole rhythm is usually soft and elastic, lacking the hard edge of the arterial thump, an undulating pulsation that rises and falls gently, like a wave, and is assumed to represent the neurologic function related to blood perfusion. Or it can be vigorous and elastic, not like the lub of the arterial pulse, which drops out suddenly under your touch, but like a rising progression of bubbles pressing to the surface and sinking hydraulically back down. This aspect of the vascular rhythm is also interesting in that it can by various means be induced to crescendo in amplitude, followed by decrescendo, and then often by tissue release.

2. Breathing: The pneumatic respiration creates a wave that originates in the expansion and contraction of the thoracic cage and diaphragm and travels longitudinally through the body. It can normally be palpated in the limbs as a subtle superior and inferior motion, inducing flexion and extension of the occiput on the atlas, and dorsiflexion and plantarflexion of the feet.

3. Craniosacral rhythm: The CRI can be palpated on the head and body as a subtle, bilateral corkscrew wave in response to the rhythmic fluctuation of cerebrospinal fluid within the ventricles. The head and torso widen and narrow and the limbs rotate laterally and medially around the axes of the long bones. Each phase of craniosacral motion usually takes approximately three seconds, although this may vary from two to five seconds. Therefore, one complete cycle of craniosacral motion, one systolic flexion and one

diastolic extension, takes about six seconds, and there are approximately ten cycles per second (six to twelve are considered normal limits).

The induction and transmission of wave activity by lesions

Any active or passive impairment may create a pattern of interference in the rhythmic field and tensile balance of the body. Energetic (behavioral) malfunctions create wave motion in the fluid medium which interferes with the physiologic motion, like a reed blown by the wind, superimposing its interference pattern in the rhythmic medium of a lake.

Practice: proprioceptive perception with a partner

Partner A: Hold your hands out, palms up.

Partner B: Your hands rest on your partner's hands. Relax your hands and keep your touch light.

A: Rotate your hands in gentle supination and pronation to approximate the CRI. See how subtle a motion you can create.

B: Close your eyes and feel the motion in your forearms and elbows. See how subtle a motion you can perceive.

Practice: palpation of poise and rhythms on self

Sit comfortably and raise your arms. Bend your elbows and place your hands gently to your head with your fingers comfortably spread. Your wrists are su pended like slings from your elbows. With your touch as light as possible, alight on the skull like water spiders on surface tension. Your thumbs are under your occipital base and your fifth fingers grace the sides of your frontal. Rest at the interface of your scalp and the atmosphere, and then settle in to the skull. Relax and register your physical impression, the poise of the total skull. Imagine for a moment the structural architecture that you know underlies this feeling. All of the joint relationships throughout the body structure refer directly to the body poise because together they create it. The fluid and membrane of the soft tissue push and pull distinctively.

Now bring your attention to the rhythm of your breath. The breathing rhythm subtly nods the head (rocking of the occipital condyles on the superior articular facets of the atlas).

Wipe your focus clean and pick up the arterial pulsation in the scalp. It should be easy to identify. Listen to it for a while, then wipe your focus clean and listen for the craniosacral respiratory impulse. The CRI is palpated as a widening and shortening, then a narrowing and lengthening of the skull. It can be deduced from the pendular motion in your relaxed elbows as they rock subtly back and forth. Now feel the motion in your scapulae as they float in and out in synch with your elbows. In this way, register the craniosacral rhythm in your body. The use of your tactile proprioceptive

pathway amplifies your own subjective joint proprioception. Each phase of cranial flexion or extension normally takes about three seconds. When you have registered the rhythm, feel it without judgement for a few minutes. Then begin to note the amplitude and symmetry of the impulse. Practice switching back and forth between the three rhythms at will, wiping your sentient (perceptive) field clean between your perceptions.

Now return to poise without losing the rhythm. From your palpatory vantage, imagine the poise of the entire body architecture as it relates to your tactile impression. This exercise strengthens your intuition.

Practice: cranial rhythm on a subject

Sit at the head of the table. Your subject is supine. Cradle your subject's head comfortably in your hands, with the ears between the third and fourth fingers (vault hold). Palpate the cranial rhythm for a minute, your blended hands doing what the head is doing. Suspend your elbows and feel the rhythm in them. Notice that you can feel a slight motion in your own arms and in your pectorals. Now "ride" with the rhythm. Get ahead of it by anticipating it just slightly as it flexes and extends, as though the hands welcome and encourage the motion. Now confront the fulcrum; anticipating the maximum motion, resist the last bit of motion not by pushing but becoming "immovable as stone." Confront the edge of each phase and let it push up against the "stone" of your hand. Then let it up, and

"welcome" it again, riding for several cycles. Now you are ready to practice the palpation of rhythms at the various listening stations of the body. This is the preliminary skill required for working with the craniosacral system.

Bibliography

Bennett, Terrence J., D.C.: A New Clinical Approach to the Correction of Abnormal Function privately published 1960

Frymann, Viola M., D.O., F.A.A.O.: Palpation: Its Study In The Workshop" Academy of Applied Osteopathy 1963 Yearbook reprint Upledger, John E. and Vredevoogd, Jon D.: Craniosacral Therapy, Eastland Press. Chicago 1983

Warwick and Williams: Gray's Anatomy 35th British edition, W.B.

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