

New thoughts on the cranio-sacral rhythm

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There are different ideas on what constitutes a healthy cranio-sacral rhythm. Different schools have different ideas of what is right. There is a very good article written by [James Jones, D. O.](#) (Doctor of Osteopathy). Although they are different from one another, most of them state generally that the rhythm should be between 12-15 cycles per minute.

The largest school of cranio-sacral therapy based on the interpretation by John Upledger states that the rhythm should be between 6-12.

After studying with Alain Gehin for 8 years, we have changed our idea of what constitutes a healthy cranio-sacral rhythm. Our conclusion is quite different from that of both Upledger and the people referred to by James Jones in his well-written, informative article.

We find that most people feel best in terms of clarity and energy when their rhythm is between 18 – 20 cycles per minute.

Polyrhythms

With almost 20 years of experience in KST, I am starting to believe that there are more than one rhythm that we can feel with our hands. In addition what we generally call the cranio-sacral rhythm, there appears to be at least one more rhythm. There is a slow rhythm of about 3 cycles per minute, which a therapist can tune into, even if his/her first impression is of a faster rhythm in the ranges mentioned above.

With many clients, I feel this slow rhythm without the overlying faster rhythms.

The overlying rhythms seem to me to be a sign of vitality in the cranio-sacral system.

The 3 cycles per minute corresponds to the rhythm of changes in barometric pressure. In cranio-sacral therapy, this slow rhythm is called the fluid tides.

Fluid Tides

In his work from the late period of his life, William Garner Sutherland worked with the cranio-sacral fluid. Other osteopathic physicians, Rollin Becker and James Jealous, continued this work with the fluid tides. Rollin Becker wrote a book. James Jealous, a student of Rollin Becker, is publishing his ideas on a series of CD's.

The work with the fluid tides has been taken up by Franklyn Sills, a Polarity Therapist in England. He holds courses

on cranio-sacral therapy and the fluid tides for non-osteopathic physicians and has published two very long books.

We had his work presented to us by Benjamin Shield, a cranio-sacral teacher from Los Angeles. Benjamin started with Upledger, studied with Alain Gehin and most of the other currently well-known teachers in the USA. His most recent area of activity is with these fluid tides. Benjamin has 20 years of hands-on experience in KST. The transcripts from his course are or will soon be available on our web side.

What is the basis for our idea of the proper range for the cranio-sacral rhythm?

Different sequences of cranio-sacral techniques will leave people with different cranio-sacral rhythms. There is a general agreement that a low rhythm is not a sign of good health. The general goal in terms of cranio-sacral intervention is to increase from a slow rhythm to a faster rhythm.

But how fast should the rhythm be? Do some combinations of techniques slow down a high rhythm?

There is a basic difference between the work taught by Alain Gehin and the Americans. The cranium changes size rhythmically, moving from larger to smaller to larger again. The agreed idea which is fundamental to cranio-sacral therapy is that this movement serves as a pump for the cranio-sacral fluid.

Most of Alain's techniques are done when the cranium is in full expansion (flexion). His techniques generally work towards freeing the 128 sutures between the bones of the skull. (Two bones might meet in several different sutures, if we define a suture as each time the joint change angle.) Alain has a technique for every suture.

Opening the sutures is like opening the petals of a flower. It is hard to open the petals from one another when the flower is still in a tight bud. It is easier to separate the individual petals when the flower has opened fully.

Most of Upledger's techniques in his first cranial course are done in extension, when the cranium is smallest. The focus of these techniques is to stretch the membrane structure and they are very effective in doing that. However, from our experience, doing cranial techniques in extension tends to leave the rhythm between 3 - 8 cycles a minute.

In his second course where he works on the bones of the face, he works in the so-called "neutral" phase, which is half way between extension and flexion – halfway between the

maximum and minimum range of movement. This leaves a rhythm at a maximum of 12 cycles a minute, though often slower. If the therapist closes the session with a still point, which is the usual procedure, the client is back to a slow rhythm.

The Upledger protocols of still point techniques, therapeutic pulse (unwinding) and somato-emotional release in my experience generally leave the patient with a slow rhythm of 3 cycles a minute.

My impression is that most of the American osteopathic tradition works in extension or in neutral. Alain's work in this regard of working his techniques in flexion is fundamentally different. In the editor's preface to Alain Gehin's book, Hugh A. O'Connor, D. O., writes, "Another important difference is that M. Gehin, unlike many English-speaking practitioners, believes that it is easier (especially for novices) to achieve a release if the techniques are performed during the expansion (i.e. flexion) phase of the cranial rhythm, when most of the sutures have a tendency to expand.

The result of Alain's techniques is to leave the cranio-sacral rhythm higher in most cases.

An observation by 2 American osteopaths.

In 1961, two osteopathic psychiatrists, Woods and Woods, reported a study on the rate of cranial sacral rhythms. One group was the patients in the psychiatric hospital. Their rhythm averaged 6 cycles a minute. People with severe psychiatric disorders had a rhythm of 3 cycles per minute. The people outside the hospital had an average rhythm of 12. For me, a client should at least be left with a rhythm of 12 cycles per minute. I believe that any cranio-sacral protocol that leaves a client with less than 12 cycles a minute should be re-evaluated.

The effect of our protocol is to generally leave clients with a rhythm of 18-22 cycles per second.

Students on our courses have a chance to experience differences in how clearly they think, how they feel and how they operate in the full range of cranio-sacral rhythms. Given the choice, the universal preference has been to be in the higher range of rhythms between 18-20 cycles a minute. Leaving people with a slow rhythm of 8 or 3 is like a bad joke.

In our first courses, we do teach some of the techniques in extension (smaller) and in neutral. However, we always follow these techniques with a flexion technique.

Although we generally promote the idea of a fast cranial rhythm, there are some exceptions. Some people with severe traumas to the head seem to do better with a slower rhythm. There was a patient who had a severe lesion of the sphenoccipital led which felt like an over-stretched or torn ligament. It was not possible to get a grip on the joint using a direct technique. The man suffered tinnitus with the high rhythm, but felt better with a more moderate rhythm.

Alain says that the optimal rhythm is determined by not only the state of the cranio-sacral system, but also the heart rate and the breathing rate.

The Polyvagal Nervous System

In addition to using the cranio-sacral rhythm to observe a patient's condition before and after a treatment, we also evaluate the state of their nervous system based on Stephen Porges Polyvagal Theory.

Stephen Porges theory goes beyond the stress (sympathetic) or relaxation (parasympathetic) physiological interpretation that is the almost universally accepted model of how the autonomic nervous system works. The old understanding of the function of the nervous system does not take into account the function of an important part of the vagal nerve (10th cranial nerve), which is found in all anatomy books.

There are two parts of the vagal nerve – the ventral part and the dorsal part. They arise from different locations in the brain stem. The dorsal part goes to the organs of digestion and its function (parasympathetic) fits our traditional idea of relaxation, i.e. a non-stressed state.

However, the ventral part of the vagal nerve is part of our mammalian evolutionary development. The old physiological interpretation of the autonomic nervous system in sympathetic and parasympathetic nervous systems is the level of function of cold-blooded reptiles.

For mammals to survive, there is an evolutionary development of both their nervous system and their hormonal functioning. This insures the caring of the mother for the baby as well as the bonding of the baby to the mother.

Reptiles lay their eggs in the sand and go away, never to help their offspring. Compared with mammals, their behavior is rather "cold-blooded". Mammals nurture their young. A human baby left in a hole in the sand would not survive more than a few hours.

In addition, survival of many species of mammals is enhanced if they can live together, help each other to find food and to join forces to protect themselves from predators and enemies. Wolves live in packs. Cattle and horses live in herds. Dolphins swim together. Primates live in families.

For mammals, communication between individuals is essential. In the least, the mother must know and respond to the signals coming from the young offspring. Others helping the mother need to be able to communicate with each other. For this caring and communication, mammals including human beings have a range of functions not found in reptiles.

We change our facial expressions – whether the mammal involved is a dog, a chimpanzee or a human being. We respond to changes in the facial expression of others of our species. We signal with sounds made in the throat. We listen to the sounds made from others. We eat together. Babies suckle at the breast.

These social, mammalian functions involve 5 cranial nerves, C.N. V, VII, IX, X and XI. Stephen Porges says that these 5 nerves operate together as the Social Engagement System

Cranial nerve V. This controls the muscles of chewing and sucking. Part of this nerve, the trigeminal nerve, reports changes in the surface of the skin of the face. This seems to be an important part of our sensing our facial expression,

which then gives us feedback on what we are feeling emotionally.

Mammalian behaviour requires a decision when meeting another member of the species. Is that individual a friend or foe? If that newcomer is a foe, then mobilizing with a stress reaction, fighting or fleeing, is appropriate and will enhance survival. If that newcomer is a friend, then the appropriate response is to immobilize without fear - to be able to be together and to enjoy each other's cooperation or company.

Cranial nerve VII. This is the motor nerve that moves the individual facial muscles (other than those involved with sucking). This nerve in humans can be used voluntarily. We can make a face.

However, most of the time the activity of cranial nerve VII is involuntary and sub-conscious. Gazing at our counterpart, our facial muscles actually contract and relax in a rapid dance of facial expressions. From these micro-movements in the muscles of facial expression, we sub-consciously gather information about not only our own feelings, but also the feelings of the other person. This is especially true when we make eye contact with the other person. Recent researchers using high-speed movie cameras record a dance of facial expressions, where one person often mirrors the other as they instinctively negotiate until they feel safe with each other.

Hearing and cranial nerves V and VII.

Generally, we assume that hearing is the function of the eighth cranial nerve. Cranial nerve VIII is necessary to hearing the higher frequency sounds in the range of the human voice. To tune into this range of frequencies, we need the function of cranial nerves V and VII. Cranial nerve V activates the *tensor tympani*, the muscle that tightens the eardrum. When the eardrum is properly tuned, it can send the higher frequency sounds deeper into the middle ear. There, the smallest muscle in the body, the *stapedius* puts a tension in three little bones, the ossicles. An appropriate tension in the connective tissue connecting these 3 bones allows them to vibrate with the sounds of the range of frequencies of the human voice. It is like tightening a guitar string so that you can get the proper tones when they are plucked. If the cranial nerves V and VII are not properly enervated, we can only hear the low frequency sounds and have a hard time hearing human voice.

Hearing human voice with the right ear

In order to process language in the speech center in left side of the pre-frontal area of the brain, sounds have to be audible and understandable in the right ear.

The more I work with children with learning problems, people with stress and depression and cases of autism, the more clear it is to me that in most of these cases, people cannot hear clearly the female voice with their right ear.

If people are unable to hear properly with their right ear, they try to process human speech with their left ear. In this case, it seems as if the sounds do not reach the speech

center directly. Hearing with the left ear is confusing. People try hard, but do not easily understand or remember what is being said, or they somehow cannot use the information.

Cranial nerve IX. This nerve is important to swallowing and producing human voice for both speech (communication of emotion and information) and pleasure (singing, or the cooing sounds that a mother makes to the baby).

Cranial nerve X. The vagal nerve, as mentioned above is in 2 parts. The ventral vagal has not usually been included in our physiological model of the way that the autonomic nervous system functions. The relaxation for restitution, parasympathetic activity is the enervation of the organs below the breathing diaphragm. The ventral vagal enervates the organs above the breathing diaphragm, the organs of the chest. These include the *trachea* and *bronchia* (windpipes), the upper third of the oesophagus and the pacemaker of the heart.

Conditions such as asthma (constriction of the muscles of the bronchia), hiatal hernia (often from a tightening and shortening of the oesophagus which pulls the stomach up into the respiratory diaphragm) with ensuing acid reflux, and irregularities of the rhythm of the heart might well be symptoms of dysfunction in the ventral part of the vagal nerve.

When the functioning of ventral vagal nerve is re-established, people often say that they have a feeling of warmth in their heart. Not a bad feeling to share with "friends".

Cranial nerve XI. Proper function of this nerve allows for the relaxation of two muscles in the neck and shoulder, i.e. the trapezius and the sternocleidomastoid. Tension in either or both of these muscles prevents us from turning our head. In a social group, turning the head is a way of facing different people without having to change our body position. Stiff-necked people who have a hard time turning their heads are not comfortable trying to communicate with more than one person at a time, and that person has to be right in front of them.

The social engagement system seems to be the evolutionary inheritance of mammals. The development of the nervous system is carried to its highest level in human beings. Thus for me, the goal of any treatment to help a person physically or emotionally should be to leave the person socially engaged.

When people are socially engaged, they can feel calm. They are immobilized without fear. They are feeling safe with the others that they are together with. However, this "immobilization" is not a state of total inactivity. With social engagement, there can also be state of reduced mobilization, which is very different than the extreme mobilization of the fight/flight of the stress response. Social engagement rather allows for calm movements that are appropriate for social activity, such as going for a leisurely walk while talking with a friend or family member, writing a letter, cooking dinner, sweeping a floor, or taking a jacket off. The quality of activity is very different than the stress state of fight/flight characterized by tight muscles ready to spring.

What we used to think of before, (before the age of the Polyvagal theory, 1996), as the desired state was parasymp-

pathetic activity. We called this “relaxed” in contrast with the stress. So when someone finished a massage or the old style of cranio-sacral therapy, they often remarked that they felt “so relaxed”, that they did not want to move, that they would like to lay on the table a little while longer before getting up. In fact, this was often sought after as well as offered as the desired state. But this form of non-stress state is not a state that enhances social activity.

The parasympathetic is appropriate to a good night’s sleep, but not something we want to be in when we go back to our family, to work or to sport or a leisure activity. In a waking state, the parasympathetic state can be described as “depression”. Parasympathetic states can be described as lethargic and isolated from other people.

In the old, pre-Gehin, pre-Porges days, I left people in parasympathetic states with low cranial rhythms. Sometimes a client would tell me that after a session, they were so relaxed that they could not drive all the way home, but had to stop along the way.

Is this the way that we want to leave our clients when they go out the door after a session? Or do we want to enhance their ability to be socially engaged by ensuring that they function in their social engagement nervous systems (i.e. Cranial nerves V, VII, IX, X and XI), going out the door with calmness and clarity and at the same time poised to enjoy social interaction?

When I see clients go out of a cranio-sacral session with another therapist who works primarily with techniques in extension or neutral, gives still points, indulges in unwinding (therapeutic pulses) and relishes in somato-emotional release, I see clients leaving not only with low cranio-sacral rhythms but also in parasympathetic, depressed states.

When I, my teachers, the therapists in our clinic and the therapists that we train send people out the door with our new approach to the work, the clients leave not only with a high cranio-sacral rhythm, but also socially engaged.

In all fairness, the foundations of cranio-sacral therapy were laid in the pre-Porges era. The Americans did not have easy access to the work of Alain Gehin, who uses techniques primarily in flexion.

I worked for ten years with the Upledger 10-step treatment and the work on the facial bones from his CST II. I had many great successes, enough to keep me going as a cranio-sacral therapist. However, with my experiences over the last 8 years studying with Alain Gehin and the knowledge from the last year and a half since I became familiar with the Polyvagal theory of Stephen Porges, I believe that we it is possible take cranio-sacral therapy to a much higher level.

A new way of teaching

In our Institute, we have always taught the techniques from Alain Gehin as our advanced cranio-sacral education.

However, as a consequence of our rethinking the question of the cranio-sacral rhythm and learning about the Polyvagal theory, we have now drastically changed our

introductory courses away from the old model. We have changed the sequence of techniques in our protocol. We have dropped some of the old, stand-by favorite techniques used by other schools, such as still point, therapeutic pulse and unwinding.

The content in our teaching is now fundamentally different than what we did before and what some of the other schools in Denmark still teach, with the exception of Britta Andersen in Haslev and Ingemarie Rørbæk in Viborg.

Me, the many people teaching in our Institute, Britta and Ingemarie are moving into a whole new understanding of cranio-sacral work. We believe that this is making it possible for us to lift most people out of the undesirable states of depression and stress up to social engagement.

When we are socially engaged, we operate at our highest evolutionary potential, able to share and love, think creatively and to work joyfully for the benefit not only of ourselves and the members of our family, but also for the various social groups (tribes) that we are part of at work and in our free time.

An estimated 50% of the population is suffering from states of chronic stress. There is an alarming growth in the number of people on anti-depressants. Given these facts, our new generation of hands-on therapy will certainly be welcomed by many people.