

CLINICAL SOMATIC EDUCATION

AN INTRODUCTION TO A NEW DISCIPLINE

by Andrew Teufel, RMT

Clinical Somatic Education: A New Discipline in the Field of Health Care, written by Thomas Hanna in 1990 to elaborate on the work he created and practiced, still has great significance today for practitioners. He titled it A New Discipline in the Field of Health Care because it was written during the inaugural summer of his first training program. The article was published in the 1990 fall/winter issue of Somatics Magazine of Mind/Body Arts and Sciences. In 1990 he also published his book Somatics and, tragically, died in a motor vehicle accident that summer before he was able to deliver the complete three-semester somatic training program.

Now, more than 20 years later, in this two-part article we will explore the system he created and some developments and divergences that occurred along the way.

BUT FIRST, SOME HISTORY

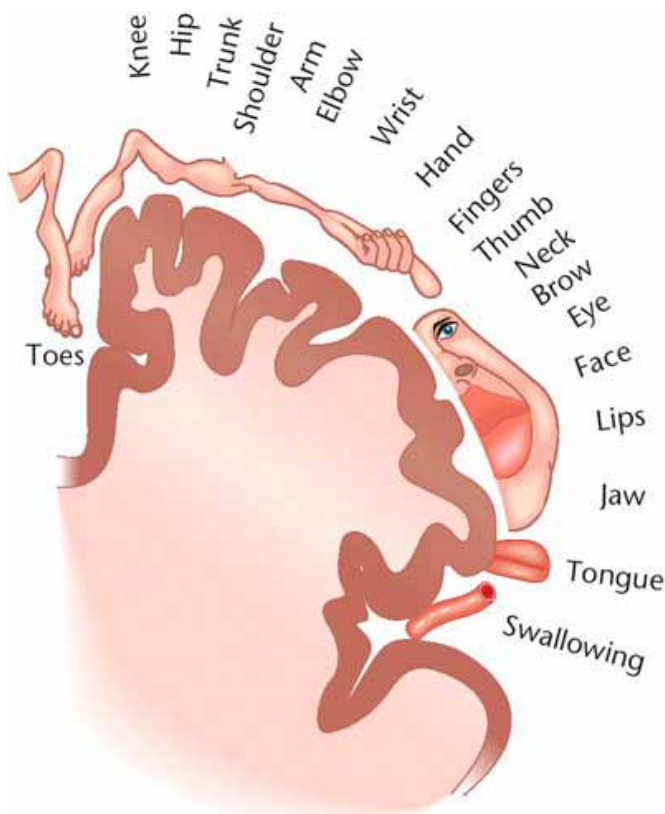
Thomas Hanna, PhD, was a pioneer and legend even as he lived. A philosopher and educator, he taught ethics to medical students at the University of Florida in the late 1960s and early 1970s. While teaching at the University of Florida he also studied neurophysiology. Hanna married Eleanor Criswell, PhD, who was a professor of yoga psychology at Sonoma State University. Hanna holds the record for teaching of one of “the largest Yoga classes ever given.” This class was held at the University of Florida, Gainesville campus, with seven hundred students in attendance, in 1972. In 1975, Hanna hosted the first North American Feldenkrais training course as the director of the Humanistic Psychology Institute in San Francisco. In 1978, he hosted the Explorers of Human Kind Conference in Los Angeles, California, which featured lectures by Moshe Feldenkrais, Hans Selye, Ida Rolf, Alexander Lowen and others.

Just as his life was amazing, so is the work dealing with clinical somatic education that he left behind. In his 1990 book Somatics, Hanna offers five case studies that examine some of the wonderful changes people have experienced from clinical somatic education. Let’s now move on to examine his concepts and methods.

SOMA

Hanna redefined the mind/body dichotomy by defining the soma (a body) as “the body sensed from within.” When we look at others, we see a body. When we pay attention to ourselves we have a soma or somatic awareness. Soma, under normal biological consideration, is a body, however, a human soma can have consciousness. Preferring to see people/somas/bodies as capable conscious beings is what allowed Hanna to teach his clients about the two nervous systems that operate the muscular system: the autonomic nervous (ANS) and the somatic nervous systems (SNS).

The ANS governs our sympathetic and parasympathetic nervous systems. Gastrointestinal, cardio-respiratory and other glandular processes are the more commonly recognized functions of the ANS. More uncommonly considered functions of the ANS are: unconscious neuromuscular contractions to stimuli (reflexes—startle, Landau and trauma); our habits of sitting and standing; and the use of the dominant hand, leg, eye, ear, etc.



An illustration of the distribution of motor information in the central area of the brain.

SNS SOMATIC CORTEX OR SENSORY-MOTOR CORTEX

The somatic nervous system (SNS) gives us conscious control of our neuromuscular and myofascial systems. The SNS is a sensory-motor system. Another way to say this is that the brain senses movement and we, then, become more conscious of our bodies. At the centre of the human brain are tracts known as the somatic cortex or sensory-motor cortex.

UNCONSCIOUS TENSION/SENSORY- MOTOR AMNESIA

The impulse for unconscious neuromuscular contraction to stimuli (reflexes) occurs below our conscious awareness by the regions of the hindbrain. Examples of this type of unconscious tension would be the startle, Landau and trauma reflexes (i.e., the pain-tension cycle). The residual tension, or involuntary contraction, held in the neuromuscular system was dubbed sensory-motor amnesia (SMA) by Hanna. SMA is a state of forgetting how to sense and control certain muscle groups or neuromuscular patterns.

Hanna helped to clarify that the somatic/conscious control can help turn off the involuntary/ANS muscular spasm and tension through movement and education. If an individual can sense the muscle that is contracted 40 per cent, then by contracting it to 40 per cent a person can lower the muscle tension from 40 per cent to 30 . . . 20 . . . 10 per cent and eventually to a state of complete relaxation. Clinical somatic education teaches voluntary control to bring about the release of the neuromuscular system and myofascial systems.

OUR PRIMARY MUSCULAR REACTIONS TO STRESS

Normally, when we think of the effects of stress, we think of the results on our heart, organs, mind, emotion, the chemistry of adrenalin and other hormones. Seldom do we consider the effects on the muscles, joints, posture and how this may influence fatigue and pain. As practitioners who focus largely on muscle and joints, RMTs should know the stimuli of the primary reflexes and their muscular and biomechanical effects that contribute to pain and stress.

STARTLE REFLEX – THE STOOPING BODY

Known as the Red Light reflex to somatic educators – because of its power to stop an individual – this reflex can keep a person frozen in muscular tension, heart rate and respiration so power-

fully that it is difficult for the individual to be aware of any other sensory information. It is the “freeze” in fight/flight/or freeze that occurs in our bodies in the event of stress. This reflex is a protective response to negative events ranging from overt danger to vague apprehensions.

This lifelong primitive reflex closes muscles over the abdomen and hunches shoulders via an over-activated trapezius, creating a stooped posture. This involuntary reaction to loud noises, anger, depression, apprehension or fear begins with a cascade of impulses originating in the primitive hindbrain. The stooped posture typifies the “Myth of Aging,” or what society considers typical for seniors. In the stooped posture, we see kyphosis of the spine, forward head posture, reversed breathing from the chest instead of the belly, and tightening of the jaw, hands, adductors, hamstrings and feet.

LANDAU REFLEX – THE ARCHING BODY

People are always surprised to learn that they are doing something they weren't aware they were doing. Similar to the startle reflex – which results in cringing of our muscles at our neck, shoulders and abdomen in response to apprehension – there is another full-body reflex, but this one is stimulated by the command to action and affects the muscles on the posterior side of the body. It is called the Landau reflex.

The Landau reflex is known as the Green Light reflex by somatic educators because this reflex is stimulated when we go, push forward and accomplish. This involuntary reflex is overstimulated today with the fast and always-moving-forward pace society keeps. This reflex tightens the paraspinal muscles and hip extensors. The contraction of these muscles are coupled with synergistic contraction in the neck and shoulders, and the hips and legs. From the lateral view, it presents as an overarched back and shoulders extending past the hips, as if the individual is ready to push forward or is just tense in the back.

When you look at military personnel or athletes, you see the Landau reflex. I have met tall men with their shoulders past their hips seven to eight inches and they are always amazed to discover this.

An infant is born helpless, using its frontal flexion muscles to cling to its mother. Later, at about two or three months, the baby discovers it can lift its head while lying prone. This new adventure of lifting the head allows the infant to see farther and this whets the appetite for more. This lifting of the head then becomes arching the back and eventually thrusting itself forward along the floor, the Landau reflex. The contraction of the extensor muscles of the lumbar spine and hip muscles have two main effects: it teaches the baby to go forward and it teaches the baby to go up. Over the next eight to 12 months, the infant uses these same muscles to sit, then stand and eventually walk.

TRAUMA REFLEX – THE TILTING BODY

This reflex is also known as the pain-tension cycle. Whenever there is pain or injury, there is the involuntary bracing and holding of the injured area. This type of holding is reflected when observing the body from the anterior and posterior views, presenting as a tilt. If a person has an injured foot, knee, hip, shoulder, arm, etc., it is reflected in bracing, tilting and using the other limb more. This tilt is a functional scoliosis and, if held long term, creates a list of other symptoms and maladies.

For somatic educators, this lateral shift of muscular tension of the largest muscles can be a contributing factor to frozen shoulder, chronic unilateral pain, headaches, temporomandibular joint disorder, leg length discrepancies and low back/pelvic/sacroiliac joint pain.

SOMATIC CENTRE AND SOMATIC EDUCATION

The motor Homunculus (Latin for “little human”) in image 1 is a graphic illustration of how much more we are aware of our hands than our trunk. About 30 per cent of our somatic awareness is at our hands and less than 10 per cent is at our trunk.

The clinical somatic education system begins with this important concept of how little we sense, and can or cannot control, the trunk. Clinically, the trunk is likely our primary focus – it is the location where the greatest amount of pain and discomfort are experienced in our clients. The three reflexes we have examined in this article affect the centre enough to distort body alignment and change the ability for an individual to control the trunk.

Biomechanically and energetically, the trunk needs great consideration: it houses our organs; it houses the central nervous system; it has the least awareness of any other body part (as illustrated); it has the largest and most powerful muscle groups; it is the nexus of upper- and lower-extremity movement; and it is the location of the centre of gravity.

Many other modalities have terms for the trunk – somatic educators know it as the “somatic centre.” Other terms for it are “the core,” and, in oriental philosophies, “hara” and “sushumna.” It is the region where the flow of movement and energy begins for our life force.

In Part 2 of this article, I will discuss the components of clinical somatic education; present a brief case study; and explore the application of clinical somatic education in a busy RMT and yoga practice.



The homunculus is the brain's somatic representation of our body.

The somatic centre is at the spinal pelvic centrum – it has the largest muscle groups, contains the pivotal centre of gravity, and houses and protects the organs and the nervous system. One of the most important concepts of the somatic centre is that it has reduced sensory/motor feedback in comparison to other body parts. For most somatic educators, even if the pain is at the hands or feet, a great deal of consideration is given to “what the somatic centre is doing” to compensate.

Revisiting the homunculus

The ‘little man’ (English translation for the Latin term – “homunculus”) is the brain's somatic representation of our body. (Figure 1) When we look at this, we see a true representation of the map of the brain for body consciousness and control (somatic nervous system). Originally mapped out by Dr. Wilder Penfield, this schematic shows the motor and sensory mapping of the cortex of the brain. “Examining the homunculus reveals the amount of brain power allocated to the thumb is greater than the entire pelvic region,” wrote Ray Long, MD, orthopedic surgeon and yoga educator. This is an important idea considering the multifaceted purposes of the somatic centre.

CASE STUDY

Cliff (figure on next page) initially came to see me to get help with his chronic but quickly escalating neck pain. His neck and low back pain were escalating significantly and with less than three months before a trip that he was planning to England, Cliff thought he may have to change his plans and not go. A quick observation of Cliff's body posture/alignment revealed distortions in the position of his head, spine, ribs and pelvis – all combining to create a rotoscoliosis.



A – Cliff before he began clinical somatic education. His somatic centre has a great deal of imbalance.

B – After treatment, Cliff has increased balance and flexibility, stands three inches taller and has greatly reduced his neck pain, which was his initial complaint.

When we look at Cliff we can see an individual whose somatic centre has a great deal of imbalance. Cliff's posture illustrates the three primary pulls that can distort the somatic centre: an overarched spine (landau reflex), forward head posture and rounded shoulders (startle reflex) and right tilt of the body (trauma reflex and hand/leg dominance). Cliff had several knee surgeries, more on his left knee. The right tilt and rotation of his torso reflects the autonomic response and patterning due to his chronic left knee pain.

Cliff underwent clinical somatic education and was able to eliminate his neck pain (original reason for seeing me) and other pain. He was also able to gain flexibility and ROM that were lost decades earlier and now stands three inches taller in four weeks – quite a feat at 79 years!

Cliff's case study demonstrates the ability to retrain involuntary muscle contractions/tension through clinical somatic education.

CLINICAL SOMATIC EDUCATION

Clinical somatic education consists of three parts:

1. Self-study/self-knowledge/somatology – the study of any human science as it pertains to oneself;
2. Manual somatics/applied somatics; and
3. Somatic mat work.
4. Each of these three components acts to increase the therapeutic results that reduce pain and increase mobility.

Self-knowledge through somatology helps to increase the individual's awareness of change. Manual somatics (applied somatics) heightens a person's awareness but also accelerates the release of involuntary muscle tension that compresses and distorts the body. Somatic mat work allows the client to work at home to help self-release and to reinforce changes made after individual sessions of applied somatics.

Through these methods of education, the use of the practitioner's hands, and through their own process at home on the mat, individuals can learn to help themselves along a path of positive body change. Clients report an increased awareness of unnecessary tension, ability to consciously relax tension, decreased levels of pain, increased flexibility, increased quality of sleep and an increase in the overall sense of well-being.

SELF STUDY – SOMATOLOGY

Registered massage therapists (RMTs) have a body of knowledge that they can impart/transfer to their clients to help facilitate self-learning and optimizing and maintaining long-term health. This transference of knowledge for self-study is essential for clinical somatic education to succeed.

Even though Cliff had amazing movement and fitness for his age, he had very little proprioceptive awareness and couldn't see his postural changes that I tried to point out to him using a mirror. Like most people, teaching him to understand the primary reflexes that affect his somatic centre and other unconscious habits that contribute to his tension and imbalance was like turning on a light to help him see where he needed to create change. In Cliff's situation, self-study (somatology) combined with his desire to keep moving, gave him quick changes in his pain levels and posture.

APPLIED SOMATICS/MANUAL SOMATICS

There are three primary hands-on techniques that clinical somatic educators use to facilitate greater release of the autonomic nervous system, reduce muscular tension and stretch the myofascial system. They are: pandiculation, kinetic mirroring, and lock-in.

SOMATICS INTEGRATED WITH MASSAGE THERAPY

Pandiculation is the primary tool that we will focus on in this article.

The term pandiculation comes from the field of animal behaviour and means “to stretch while yawning.” It is the activity you see in cats, dogs, humans when waking to release tension. According to a Canadian study in comparative pandiculation of animals, the self-stretching that animals do seems to be “for kinetic output and general comfort.” Hanna used the term pandiculation to describe the facilitated releases that are done with conscious participation from the client. This form of muscle energy activates the client’s participation and awareness/consciousness, versus forms of muscle energy that do not engage the consciousness of the client. Practitioners utilize their hands to facilitate the awareness and release of unconscious tension, similar to the self-pandiculating that animals do to stretch their bodies.

Cliff was seen for applied somatics sessions once per week over a period of four weeks. As well, he did somatic mat work between his appointments.

In the first session with Cliff, we used applied somatics/manual somatics with the abductors and adductors of the pelvis in order to create a balanced neutral position for the pelvis. For the second session, we focused on manual release of the right latissimus dorsi and oblique muscles that contributed to the compression of the right shoulder and ribcage in order to correct his tilting posture. In the third session we focused on his obliques, rectus abdominus, serratus anterior, pectoralis and sternocleidomastoid muscles to open the chest, rounded shoulders and forward head posture. In the fourth session we focused on his paraspinals to help Cliff to understand how long and relaxed they could be.

SOMATIC MAT WORK/SELF-RELEASE

Mat work can be taught to clients on the table, with movements specific to the needs of the client. In Cliff’s situation the mat exercises reinforced the applied somatics/manual somatics (pandiculations) done in individual sessions. The mat work is a form of self-pandiculation, similar to the movements that animals do to remain limber.

In the first session we taught Cliff the some targeted exercises and the horizontal component of walking to release his abductors and adductors of the pelvis. In the second session Cliff learned shoulder clockwork and the appropriate exercises, to release the oblique and latissimus dorsi to release the tilt and leg length difference. In the third session we taught him arch-and-flatten and arch-and-curl – floor exercises aimed at helping him lengthen and relax the paraspinal and abdominal muscles. In the final session we instructed Cliff to learn a simple extension movement to increase his awareness to being able to voluntarily release his extensors – this movement involves extension and rotation of the spine.

Somatics offers a functional model for the approach to pain, posture and myofascial-osseus health issues. The functional model that we express to our clients is the hierarchy of consciousness. Its progression is:

1. bone is a servant of the myofascial system;
2. the myofascial system is a servant of the brain/CNS; and
3. the brain has two paths for the control of the myofascial system – somatic/conscious control and/or autonomic/unconscious control.

The somatic control can reset and reduce the autonomic myofascial-osseus tension from the pain/tension cycle, habitual patterns of tension from hand use, standing/sitting, and the tension and stress response from the startle reflex, which is overstimulated in today’s society.

Somatics fits well into an RMT practice because it is easy to use by both practitioner and client. RMTs are accustomed to having the client on the table lying down. About 75 per cent of somatic exercise (to be done on a mat at home) and education is done lying down to reduce/change the autonomic/habitual/myo-osseus tension patterns. About 90 per cent of the applied somatics/manual somatics is done lying down for the same reasons stated.

Finally, engaging our client’s awareness in education and participation means engaging self-care, self-release, self-improvement and self-assessment of their body in everyday life.

Sources used for this article

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Andrew Teufel has been an RMT for 20 years. He is certified from the Novato Institute for Somatic Research and Training, a Yoga teacher and a former RN. He has been providing continuing education for RMTs in somatics since 1997 and is the creator of Applied Somatics and Applied Somatics Institute. Andrew is a presenter and consultant to private and public businesses and groups.