

## Connective Tissue: The Psychosomatic Matrix

My primary focus with patients has always been the relationship between their body and mind. Following the pioneering work of the Austrian psychiatrist and psychoanalyst Wilhelm Reich, I have spent almost 50 years trying to understand how these two seemingly different realms can be so inherently intertwined in their functioning, what Freud called the “mysterious leap”; from psychic activity to physical manifestations of these psychic phenomena in the body. Over the last 30 years it has become clear that connective tissue’s structure and functioning is the bridge between psyche and soma. Immediately, questions arise, What could connective tissue possibly have to do with the psychic realm? How could connective tissue (CT) be involved in solving the body/mind conundrum?”

I first approached this theme in 1997/8 from clinical observations describing the obvious correlation between the schizoid character and the physical structuring and functioning of connective tissue as a way to understanding the responses that were arising in patients to the Points&Positions touch technique used in Functional Analysis. (Davis, 2017, *The Biological Foundations of the Schizoid Process, Part I&II*) One example was how the specific rigid quality found in schizoid tissue matched perfectly with the dehydrated, fibrous quality of stressed CT. But this was clinical observations. We needed biological confirmation: not just description, but explanation!

Further research and study lead to the article *The Role of Connective Tissue in Development and Defense*. (Davis, 2017) CT’s role as creator and the organizer of the body’s form and shape was already known and being worked with for over 100 years in manipulation therapies i.e. Osteopathy and later Rolfing. But it was Oschman’s research and formulations (1981, 1988, 2000) that revealed not only the physical aspect of CT, but more importantly for a body oriented psychotherapy, the energetic/informational aspects of CT.

First, he showed the overall importance of CT; how *every* bodily function takes place within some form of CT from liquid (blood plasma, inter synaptic spaces) to tissues (ligaments, tendons, mucous membranes) to solids (bones). Then he described how the successful transmission of all the body’s energies — sound, electricity, electro-magnetism, heat, light — are dependent on the healthy state of CT and how disorder interferes with — distorts — the transmission of these energies through out

the body. He emphasized, that these energies passing through the body are information, literally instructions for the body; what to do and how to do it right from simple cellular metabolism on up to movement through space and even on to cognition.

Nerves only carry information, they don't generate it. This information, the raw data of experience, is streaming into our different nervous systems via the various types of CT. Where this information comes from and how well it is transmitted determines how a person feels, thinks and moves. Schleip's description of newly discovered micro-receptors (2012) housed in fascia throughout the body gave us a way to understand where this information was coming from and how it got to the brainstem and upward to cognition. Bodily sensations are the raw data we experience as the things informing us on what is positive or negative: approach/avoidance. It's the basis of Reich's expansion in pleasure (lust) and retraction in unpleasure (unlust) This is tropism, which all living systems have. As a result, emotions are more than simply experiencing the raw data. Emotions are a reaction, a later evaluation of this data. They are always *about* something: I am angry about, I am afraid of, it hurts me when, etc. They have a cognitive element but the raw data is defining us whether we know it or not.

In addition, it was later shown that connective tissue dysfunction provides the body with distorted information/experience leading to, as Schleip pointed out, individual "differences in interoception" (Schleip 2012, p. 92). In short, shape, movements and self-experiences are altered by the person's interpretation of the interoceptive information coming in from the state of their connective tissue.

I agree with Ida Rolf's view that while we certainly need to include the "physical reality of the nerves":

[The nervous] system is not the only mechanism for communication within the body...we introduce a new point of view, that the myofascial system functions as a means of communication. We postulate that lines of strain within the myofascia alter the informational content of the system. (Rolf, 1977, p. 200) On the contrary, his nervous system must somehow be brought into balance with his other somatic potentials, even though it may demand *downgrading* [emphasis added] the apparent competence of the nervous system. (Rolf, 1977, p. 201)

Here, Rolf is also grounding Reich's "muscular armor" concept in the body supporting his insight into the primary level of plasmatic functioning.

While Rolf and Oschman were revealing how psyche and soma could be in relationship, Reich was the first to see that psychic and somatic states, and I add emotions, were two different forms of the same thing, making it three states in my model There was no mysterious leap necessary. "Every

psychic impulse is functionally identical with a definite somatic excitation. A jump from the psychic into the somatic is inconceivable; for the assumption of two different fields is erroneous.” (Reich, 1967, p. 313) With this newer research, it is now not so difficult to understand that two things (or three) can be one. A parallel can be found in physics in the term “triple point” whereby any material can exist in the three different states of gas, liquid and solid at the same time! Stay with us, its all rather simple. For example, ice steam and water; three forms of the same underlying functional state of the molecule H<sub>2</sub>O. It all depends on the energy state of each. The same can be said of the psyche (gaseous), emotions (liquid) and the solidness of body (ice).

This non-neural, communication system between psyche, soma, and emotions is built on the discovery of how an instantaneous, body-wide system could exist without nerves. Two and a half billion years of life passed successfully before nervous systems began to appear. In a wonderful bit of phrasing, Brooks, an artificial intelligence theorist, calls it “Intelligence without Reason”. (Brooks, 1999) Szent-Györgyi (1941) explained how this is possible. The collagen fibers of CT transport the biological energies, within the body. This “living” matrix of connective tissue acts as a unified and unifying, communication system because, from a CT point of view, “everything is connected to everything else” from the macro to the micro, from the skin surface into the nucleus of every cell. It is the structure and the functioning of this CT matrix, that creates the psychosomatic matrix: the relationship between psyche, soma and emotions. “In this model, supported by evidence from biochemistry, cell biology, biophysics, and neurophysiology, the collagen matrix provides pathways for rapid intercommunication throughout the body, enabling the organism’s mind-body to function as a coherent whole.” (Rubrik, et al., p. 7)

Another fascinating aspect of connective tissue that correlates with psychotherapy is the combination of its two main, seemingly opposing, functions simultaneously within the same system; connection and separation. Again the parallel to psychotherapy is obvious. In psychological terminology these two themes are the major subject matter of development and relationship, (connection) and independence (separation), whereby one becomes a being separate from the other, yet remaining in relationship/contact. The psychoanalyst Margaret Mahler spoke of a dual unity between mother and infant. This mother/infant duality in childhood development is a constant dance between attachment, bonding and dependence and separation, detachment and independence. If this delicate dance is not performed well enough there is serious trouble ahead for the child in adulthood. On the physical, psychic and emotional level too much separation is detrimental

becoming coldness, isolation and loneliness as in schizoid states. The same is true for an overdevelopment of connection/bonding which then becomes merging and symbiosis: typically known as oral states. This is not an analogy. It is a representation of identical functioning in what appears to be the two seemingly unrelated realms of psyche and soma.

I would like to exemplify this overlapping of the psychological, emotional and somatic. (PES Axis - Psychic/Emotional/Somatic Axis) Fascial fibrils and fibers are woven into all parts of the body forming a weblike matrix throughout the body. When there are problems within the fascial system due to disease, disorder or mechanical overload, it responds to these stresses and threats by increasing its mass through adding additional fibrils, causing a thickening and a “gluing” together of these tissues making them collectively stronger. (This is the “tight muscle” or “knots” we feel when touching our patients.) Due to this tension in the system, dehydration sets in, diminishing and distorting the transportation of sensation, energy, and information.

On the psychic level, when the mother is unable to let the separation dance continue, she casts what the psychoanalyst Kohut (2001) calls the “narcissistic web”, entrapping and encapsulating the child in an interwoven matrix based on her own emotional needs, overloading the child and its desires and needs. The more the child tries to separate, the more the mother tightens, holds on, the psychic equivalent of fibrotic build-up. In this case there is no healthy functioning matrix creating both connection and allowing for separation. There is only a sticky web. Mother and child are “glued” together, just as fascial fibers glue together when exposed to abnormal stress conditions. I repeat myself. This is not an analogy, it is a representation of identical functioning in what appears to be two unrelated realms.

The fact is, there is no real contact and relationship without separation which Perls emphasized in Gestalt therapy mimicking Reich’s pulsatory model. But how to establish what one patient called a “contactful distance”? How is it possible for a fiber, a fascia, a daughter, a friend or a lover to be both connected and yet functionally separate; independent but not isolated or split off? Physically, this is perfectly well stated when Guimberteau discussed the “architecture of fascia” in his groundbreaking endoscopic research of living tissue. “A living form has to be structured but it also needs to be mobile, supple, adaptable, and self-sufficient” (Guimberteau, 2018, p. 78). Or described emotionally by Dan Hicks and His Hot Licks: “How can I miss you when you won’t go away?”

Both these representations are description of the important issues in healthy functioning borders: contact and separation.

Another theme concerning CT and psychotherapy is touch. Beginning with Harlow's research in the 1950s it has been shown that touch is of the essence in human development. Yet, in psychotherapy the fact of touching a patient is still a sensitive subject in itself. Reich made a great leap by beginning to touch his patients in the 1930s but touch remains the exception in psychotherapy until today. He physically manipulated tight muscles to "free" them, sometimes quite forcibly. Currently, different schools of body-oriented psychotherapy touch the patient during treatment in various styles, mostly much gentler than Reich's original interventions.

About 40 years ago I moved away from the more provocative methods of stressful exercises, exaggerated breathing techniques and invasive physical manipulation. The less invasive, evocative, Points&Positions physical touch technique focuses on an application of a gentle pressure on CT during the "Points" work and utilizes an adaption of Lawrence's Jones' gentle osteopathic technique Positional Release during the "Positioning" resulting in working *with* tensions and contractions, not against them to insure that there are "no surprises for the central nervous system" and the defenses are not activated. There is no advantage to waking the tiger!

Psychotherapy works with sensitive psychic issues that are painful. The question is how to bring focus of some sort to an already sensitive area. If it is not well done, it will feel too forceful and invasive for the patient or a repetition of parental behaviors. In psychotherapy, when discussing problems with patients, we are "touching" on sensitive areas and must proceed carefully and respectfully. In body-oriented psychotherapy the theme of touch is not only limited to these themes and where and how to touch the patient, but also includes physical pain. When we touch physically we are not only dealing with physical pain, but the long history that caused it; the combination of personal history and emotional pain, the somatoemotional element. Embodiment is possible because of CT functioning.

Since psychological stress can cause physical dysfunction, Body Psychotherapy, and dance and movement therapists have to be sensitive to the physical, psychic and the historic emotional pain. What complicates this theme is the multidimensional nature of pain. Simply stated, some "pain" is not pain. Many patients have belief systems about pain and develop what can be called

“anticipatory” pain: to be touched hurts. Again, here, I repeat myself, twice. This is not an analogy. It is a therapeutic reality. And, this is the representation of the physical reality of the psychosomatic matrix. These painful memories, histories and stories — soft tissue memory — are stored in the the connective tissue. It is also another example of how the body and mind are the weft and warp of the woven connective tissue psychosomatic matrix.

Another valuable connection between body and mind is connective tissue’s plasticity. It is known that psychological stress can cause physical stress in terms of CT structure and functioning. As mentioned, it spontaneously reorganizes itself against added stress and load as in the thickening and dehydration described. Of special interest to all touch-oriented therapists, is its unique ability to reorganize itself again *after* the debilitating stress has been released. It is capable of going back to its original form and functioning; plasticity. Tissues can be overstressed, so that complete repair is not possible. But this innate ability can still be depended upon consistently in treatment. The plasticity of connective tissue is why and how our touch treatments can be effective and is the hope of body psychotherapy.

This brings up basic questions in psychotherapy. Do patients need the therapist to “make” the changes or can they, under the right conditions, as Carl Rogers suggests, reorganize themselves and return to the prestressed state of natural, healthy self-regulation? This second formulation was the founding concept for Humanistic Psychology now often called Positive Psychology or “resource based” or salutogenesis which asks what keeps people healthy? Or how do people get healthy even under a heavy stress calling on the patient to utilize his or her own resources, their own “plasticity” if you will.

But what are these resources, where are they, why are they not available to the patient if they already exist within? What are the “right” conditions and to what extent is change possible? It is an ongoing discussion in psychotherapy of what can be “undone” once it has happened. Is it possible for the patient to return to a pre-traumatized state, or is there simply damage that cannot be undone and the therapy involves helping the patient to adapt and compensate to the present condition? As the body psychotherapist Keleman posited ... “there existed no ‘real self’ that could show up after all the distortions and deformations of education and biography had been peeled off” (Strecker, 2019, p. 54). Or is there an “undamaged” self that has not been ravaged by all the negative forces the patient has experienced, with its psychic, emotional and physical “plasticity” still intact, which

can be returned to once the overload and stress is resolved? In Functional Analysis we have postulated just such a real self, the psychic equivalent to CT's plasticity; the endo self; an "undamaged self" that lies under all the troubles, problems and traumas and can be evoked in healing (Davis, 2014) which is another way to say the psychosomatic matrix. (Davis 2018)

One woman stands up after a Points&Positions touch treatment and says: "I know this is ridiculous, but I feel like I am queen of the world." Another says to nobody in particular, "You know, I always wanted to be somebody." Where does this come from simply by touching — not analyzing, discussing or interpreting, or breaking through defenses? Our inescapable conclusion is that there is an undamaged, psychosomatic matrix that connects psychic, emotion and soma (PES) into one unit on the functional level and the patient can realize this through touch and talk.

### **Summary**

Connective tissue is the primary tissue from the beginning of life itself. All later evolutionary developments and functions occur within this sea of cells, fibers and ground substance. Even nervous activity is dependent on its structure and functioning. This is evident from the fact that various manipulations of different forms of connective tissue — even in the "non-psychological" manual therapies such as Rolfing, massage etc. — can result in memories, emotions and spontaneous movements emerging. So either touching the body connects with "psychic" brain based memories or working psychically activates the memories stored in the body. Either way one formulates it — top-down, or bottom-up — they are directed connected.

In Functionally Analysis its clear that a bottom-up model is called for. Live exists without the "top"; cognition, representation, language and meaning. So-called "lower organisms" can move, feed, reproduce, grow and survive without these later developments. The same is true for the human embryo and infant. The opposite cannot be said. Higher functions would not exist without these lower substrata. (Dudas, et al, 2208, Brooks, 1999)

To work deeply, should we focus on the final information formulation on the conscious, cognitive , language based level or should we work with the sources of this informational input — the raw data coming into the nervous systems — helping the patient to re-experience him/herself? "We know

much about the language of the nervous system, but little about the kind of messages that might be conducted by the living matrix.” (Oschman, 2021, p. 197)

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See also: the Role of connective Tissue in development and defense and Introduction to Connective Tissue: The Psychosomatic Matrix

## References

Brooks, R. (1999) *Cambrian Intelligence: The Early History of the New AI*. MIT Press, Cambridge, MA.

Davis, W. (1997-8) *The Biological Foundations of the Schizoid Process, Parts I&II. Energy and Character* Vol. 28 and 29, P. 57-77 and 55-66, 1997-8. International Institute of Biosynthesis, Heiden, Switzerland.

Davis, W. (2014) *The Endo Self: A Self Model for Body-Oriented Psychotherapy*. International Body Psychotherapy Journal: The Art and Science of Somatic Praxis. 13/1. ISSN 2169-4745 Printing, ISSN 2168-1279

Davis, W. (2018) *The Role of Connective Tissue in Development and Armor*, *Somatic Psychotherapy Today*. <https://somaticpsychotherapytoday.com/>.

Davis, W. (2018) *Working with Trauma Without the Drama: Abused and Still Alive*. Paper presented at the congress of the European Association of Body Psychotherapy, Berlin.

Dudas, M., Wysocki, A., Gelpi, B., Tuan, T. (2008) *Memory Encoded Throughout Our Bodies: Molecular and Cellular Basis of Tissue Regeneration*. *Pediatric Research*. Vol. 63, No. 5, 2008 0031-3998/08/6305-0502.

Kohut, H. (2001). *The analysis of the self*. Madison, Connecticut: International University Press.

Oschman, J. (1981) *The Connective Tissue and Myofascial Systems*. Aspen Research Institute. Aspen, Colorado.

Oschman, J. (1998) *What is Healing Energy?* *Journal of Bodywork and Movement Therapies*. Ed. Chaitow, L. Churchill Livingstone. Edinburgh.

Oschman, J. (2000) *Energy medicine; The Scientific Basis*. Churchill Livingstone. Edinburgh.

Rubrik, B., Muehsam, D., Hammerslag, R., Jain, S., (2015) *Biofield Science and Healing: History, Terminology and Concepts*. *Global Advances in Health and Medicine*. doi: 10.7453/gahmj.2015.038.suppl



Schleip, R. (2012) Fascia as an organ of communication. doi: 77-79. 10.1016/B978-0-7020-3425-1.00045-3.

Strecker, M. (2018) Less is more: In remembrance of Stanley Keleman. *International body Psychotherapy Journal*, p. 52-56, 17/2.