Posture: alternatives to the prevailing paradigm
By Steven Goldstein

In this the third of Steven Goldstein’s series of articles, he discusses gravitational orientations.

One of the first considerations we have when dealing with postural dysfunction is to have an understanding why the posture of a particular individual is the way it is and what are factors affecting the individual to create the postural form we’re viewing.

What is the prevailing paradigm of posture? The prevailing paradigm is typically one where we attempt to look at posture according to a vertical plumb line, with any asymmetry considered to be faulty posture and there is usually an attempt to strengthen weak musculature and to adjust and compensate the contracted musculature. We see postural distortion as primarily a muscular imbalance.

There are many models that recognise a gravitational approach. These include the views of Ida Rolf and Thomas Myers’ Anatomy Trains approach, both of which include another interesting model called ‘Tensegrity’.

These approaches take a brief view of how the structure and function of the body interact with sensory perception and intrinsic movement in regards to conscious and unconscious control of posture. The approach we will focus upon in this article is Ida Rolf’s.

Ida Rolf’s approach
Ida Rolf (1896-1979) had a decidedly different view of structure and posture.

Rolf states:
The first question is, what is structure? What is structure in anything? In humans, it is decidedly not posture, although most people seem to think the two words are synonymous. Etymologically speaking, the word posture contains an element of placement. The root of the word is the Latin, ponere, ‘to place’. The past participle, positum, means, ‘It has been placed’. Applied to humans, posture implies that something has been placed, or for the most part forced, into a space where properly and structurally it does not belong.

‘Shoulders back, guts in’, is a military adage. It means to force you to do what does not come naturally. The minute you force yourself to maintain a posture of this sort, you betray that all is not well with your world. You show the world that your structure and your posture are at war.

In any plane, physical or non-physical, structure implies relationship. Living bodies are such forceful and intimate expressions of vital energy, or the lack thereof, that the fact that they are also material manifestations in a three-dimensional world often disappears.

Balance reveals the flow of gravitational energy through the body. Asymmetry and randomness betray lack of support by the gravitational field. All these considerations are inherent in the word structure as it is applied to any three-dimensional system. ‘In no world can the flow of gravity reinforce imbalanced, asymmetric structure. Since it is segmented, the human unit is more plastic than an inorganic unit, and succumbs more quickly to the unequal torques of everyday life.’ But thanks to the same plasticity, it can be re-patterned.

Rolf viewed the basis of balance in the face of gravitational influence to be best dispersed by the soft-tissue fabric that disperses it - fascia. Much her life was spent in the pursuit of researching and understanding the role fascia plays in the organisation and maintenance of human uprightness.

The gravitational field of the earth is easily the most potent physical influence in any human life. When the human energy field and gravity are at war, needless to say gravity wins every time. It may befriend and reinforce activity…or it may be foe and drag (a person) to physical destruction. Structure holds the key.

Rolf was fond of the metaphor of building blocks. Her example was one of blocks encased in a very thin elastic sack. In this metaphor, the local variations on stretch in the sack serve as a measure of the strain and
displacement of the weighted blocks. And when one block shows strain or distortion so will the others in corresponding relationship. It will do so until all blocks are aligned with its neighbour.

Since bodies are designed to contact the earth, of necessity they must stand on their feet and not be attached to the sky. So if you were to lift them by a skyhook and see their more slender straighter beauty, you must put them down again, and then stand them on the earth. Once down again, you would recognise no amount of lift is going to change the built-in structural compensations.

*Gravity is with us from the time of our conception to the moment of death.*

The inevitable action of gravity anywhere at any time on any soft pliable mass is to bring it nearer to a formless, chaotic, spherical unit. It acts to shorten, thicken and compress.

**Flexors flex-extensors extend**

Rolf was found of a key concept: her key to maintaining a balanced body is her concept of *when flexors flex, extensors extend.*

*In the conventions of physiology and kinesiology, the basic unit of movement is the paired flexor and extensor. The first member of the pair, which is the flexors, brings the ends of body parts closer together. The second of the pair separates the ends, (extends). A bent body is said to be in flexion; when straightened, it is in extension. Straightened past the vertical line, it is said to be hyper-extended. In as bending body, the flexors have been activated and have ‘flexed’, that is they have shortened and drawn the extremities together? But what of the extensors? When you bend your back, what does it look like? Does it lengthen or shorten? Does it pull into your shoulders? A basic test of body structure is its pattern of flexion. If the body is balanced, not only do the flexors flex, but the extensors simultaneously extend.*

All muscles are covered both individually and as a unit by continuous fascial coverings. In healthy posture this fascial covering has strength and flexibility in the form of deformation and recoil. Elasticity is its quality. ‘Shortening of a myofascial unit is as important and legitimate a function as lengthening, it is only chronic shortening that causes concern.’

**Tensegrity**

When we look at this concept of Ida Rolf saying that one of the basic Tenets for uprightness in the face of gravity is how the body is maintaining its balance between flexion and extension, she implies that the myofascial has an enormous structural and functional role to play. This fascia fabric is maintained by tension, and that tension is in relationship. Such a concept of this tensional relationship is the term ‘tensegrity’, or tension integrity.

Tensegrity is a term coined by architect/engineer Buckminster Fuller, that represents a system characterised by a discontinuous set of compressional elements (struts) which are held together, up righted and/or moved by a continuous tensional network (Myers 1999, Oschman 1997).

Fuller, one of the most original thinkers of the 20th century, developed a system of geometry based on tetrahedral (four-sided) shapes found in nature which maximises strength while occupying minimal space (maximum stability with a minimum of materials). From these concepts he designed the geodesic dome, including the US Pavilion at Expo ‘67 in Montreal.

Tensegrity structures actually become stronger when they are stressed as the load applied is distributed not only to the area being directly loaded but also throughout the structure.

They employ both compressional and tensional elements. When applying the principles of tensegrity to the human body, one can readily see the bones and intervertebral discs as the discontinuous compress ional units and the myofascial tissues (muscles, tendons, ligament, fascia and to some degree the discs) as the tensional elements. When load is applied (as in lifting) both the osseous and myofascial tissues distribute the stress incurred.
Of Tensegrity, Deanne Juhan from Jobs Body tells us:

Besides this hydrostatic pressure (which is exerted by every fascial compartment, not just the outer wrapping), the connective tissue framework - in conjunction with active muscles - provides another kind of tensional force that is crucial to the upright structure of the skeleton.

We are not made up of stacks of building blocks resting securely upon one another, but rather of poles and guy-wires, whose stability relies not upon flat stacked surfaces, but upon proper angles of the poles and balanced tensions on the wires ... There is not a single horizontal surface anywhere in the skeleton that provides a stable base for anything to be stacked upon it.

Our design was not conceived by a stone-mason, Weight applied to any bone would cause it to slide right off its joints if it were not for the tensional balances that hold it in place and controls its pivoting. Like the beams in a simple Tensegrity structure, our bones act more as spacers than as compressional members, more weight is actually borne by the connective system of cables than by the bony beams.

Oschman (1997) concurs, adding another element:

Robbie (1977) reaches the remarkable conclusion that the soft tissues around the spine, when under appropriate tension, can actually lift each vertebra off the one below it. He views the spine as a Tensegrity mast.

The various ligaments form slings that are capable of supporting the weight of the body without applying compressive forces to the vertebrae and intervertebral discs.

In other words, the vertebral column is not, as it is usually portrayed, a simple stack of blocks, each cushioned by an intervertebral disc.

Postural corrections to dysfunction has always been applied by concluding the skeletal structure has provided the framework for uprightness in gravity and support, and if we adjust muscular tension it will allow for transformation to the skeletal support and consequently shift postural distortions. A more contemporary paradigm concludes that myofascia has a much greater role to play in postural dysfunction and is a critical tissue in transforming postural dysfunctions.

Reference

2. ibid p 30
3. ibid p.70
4. ibid p.69
6. Juhan 1987
7. Barnes 1990