DYNAMICS of the THORACIC SPINE and Massage

By Lynn and Ann Teachworth for the 2019 AMTA National Convention
Introduction to Structural Dynamics

Structural Dynamics is a way of understanding the body through the lens of structural integration concepts and adding the layer of embodied functional movement. **This integrated approach moves the therapeutic goal and application beyond structural (re)organization to also emphasize functional restoration and optimization.**

Structural Dynamics is designed to lead therapists in experiencing and understanding their own structure and function in a new embodied way while also exploring more specific deep tissue and functional myofascial release work. This integrative, experiential approach clarifies the therapist’s focus and intention while working, enriching and deepening their work and results with their clients.

Concepts of Structural Integration

Structural Integration is a process of helping the body to reorganize its fascial system into a proper structure and functional alignment. By releasing areas of tension and restrictions that have been held tight, we will be allowing the relationships of all the systems and parts of the bodymind to heal and function at optimum levels within themselves and with each other.

Our goal with structural work is to reorganize the systems of the body via the fascial system and allow them to reorganize and reintegrate into healthier states of being.

“One individual may experience his losing fight with gravity as a sharp pain in the back, another as the unflattering contour of his body, another as constant fatigue, and yet another as an unrelenting threatening environment. Those over forty may call it old age; yet all of these signals may be pointing to a single problem so prominent in their own structures that it has been ignored: They are off balance; they are at war with gravity.”

~ Ida Rolf

In structural theory, we look at the connective tissues (fascia) that provide support, protection, emotional storage, and space within the body. When the fascia becomes restricted, it will cause an adaptive shortening that will be compensated for in other areas within the body to help it remain upright and protected within the gravitational field and its environment. It is a compromise using both rigidity and collapse that will ultimately lead to inefficiency, pain, and disease within the body.
**Tensegrity**

“This is the gospel of Rolfing: When the body gets working appropriately, the force of gravity can flow through. Then spontaneously, the body heals itself.”

~ Ida Rolf

Architect and inventor Buckminster Fuller coined the term tensegrity (tensional integrity) to describe a principle for designing light-weight integrated structures that deliver great stability with minimal material. These structures differed from traditional structures that employed a “ground up” stacking of compressive elements. For instance the average house is made by stacking bricks or lumber on top of each other to have form. Although very strong, it is fairly rigid and is certainly not a flexible and adaptable structure. In a healthy body, forces should be absorbed and transmitted efficiently primarily through the tensile elements with minimal compressive weight-bearing by structural elements.

“Fascia supports and lifts weight. Weight goes up, not down. Bones do not carry weight.”

~ Ida Rolf

**Locked Short and Locked Long**

In the body there are many relationships that appear to work in opposition to each other in order to work synergistically. An example is the bicep and tricep muscles, where the bicep is mostly for flexion and the tricep is for extension. Although we classically think of them as working against each other (as antagonists), the arm relies on them to work together in function to accelerate and decelerate movements through all planes of motion. It may appear that one muscle is dominant during a certain movement because it is engaged in concentric contraction, for instance, the bicep contracts as the hand is drawn up toward the mouth when eating, but the opposite muscle, the tricep is also contracting eccentrically to control the movement and keep the hand from hitting the mouth. Every muscle and fascial group works in this way with every part of the body depending on the body's position and action.

The myofascial system is always working synergistically until it is interrupted by trauma, injury, or emotional adaptation. Since the fascia passes through and surrounds every cell in the body in a series of helixes, it is very prone to being pathologically shortened under constant stress or trauma, Our bodies are designed to be synergistic during movement and in a load-bearing situation, whereas they are meant to be balanced and neutral at rest. As the tensegrity model of the body breaks down, fascia can quickly become inhibited in both posture and function. This is where we get the concepts of “locked short” and “locked long”.

If a fascial area is under prolonged stress or load it tends to lock down and become stiff, immobile and dehydrated. This is usually the area where we experience stiffness and chronic pain. Fascia that has become locked in a shortened position or “locked short” is most often in...
areas of trauma, emotional holding patterns, or overuse. This will lead to areas in the opposing fascia that are locked in lengthened or “locked long” position in order to compensate so that the bodymind can cope and create a sort of balance, though unhealthy and compromised.

One of the most common areas of fascia that is locked short is in the chest area. If the person is in heart-protection mode or has been bending over a computer for a long time, the fascia will become shortened. The body will go into a head and shoulder forward posture then the chest and anterior neck and shoulder muscles (pectorals, sternocleidomastoids, scalenes, anterior deltoids, serrates anterior fascia, and sub occipitals) are pathologically shortened. To compensate the body will lengthen the posterior upper back and neck (rhomboids, trapezius, and levator scapulae fascia). The upper back and neck are fighting with the chest and anterior neck to maintain balance. After a few hours the tissues in the back become tight and painful. They are in a 24 hour tug of war over the shoulder girdle and head and neck position. So, what is the priority here?

**Structural Relationship Reading**

“Support is a relationship, not something solid.”

~ Ida Rolf

As we look at the body structurally, it is important to realize that the body is made up of a seemingly endless number of relationships. In fact every cell in the body has a relationship with all other cells in the body as well as every environmental factor. With the myofascial system, we are mostly concerned with how body parts are in relationship to one another and to gravitational and pressure factors. In this class we’re specifically working with the thoracic spine, abdominals, chest, and shoulders so we’ll be looking at relationships involving these aspects of the body.

Thoracic Relationships to consider:
- Rib cage to pelvis
- Thoracic spine to cervical spine and head
- Humerus to thorax - internal/external rotation
- Between thoracic vertebrae during spinal extension
- Scapula to thorax - protraction/retraction, elevation/depression
- Motion in all joints

Relationships can look different when observed from the front, back, side, standing, and laying down. Be mindful not to look only from one vantage point but rather let the body continue to tell you its story as you observe from different perspectives. We also practice zooming in and isolating a particular relationship as well as zooming out to notice the global
dynamics at play. We can then observe how the dynamic of one relationship, say the pelvis to ribs, may be impacting the nature of the other relationships and vice versa - nothing in the body, on any level, occurs in isolation.

**Embodiment**

Embodiment in this context is the more accurate experience of and presence in the body; having a tangible multi-sensory experience of specific structures, functions, and dynamics. It is an integration of mind, being, and body; as opposed to thinking about or assessing the body as a separate object, one has a sense of presence and lived experience in/of body.

Many of us live fairly disembodied or disconnected from our bodies. Our culture (particularly the healthcare industry) teaches people not to attune to their own being, health, body, wisdom, etc, but rather to rely on outside experts to tell them what to do, have, or be in order to "fix" the current "problem" (which is rarely the root of their issue anyway).

Embodiment is a pathway to breaking this cycle. Being present and integrated in your own body with an observer’s mind invites you to engage with yourself and your life in a more conscious manner. We utilize the Franklin Method™ to practice embodiment because it provides a clear, body-centered methodology that uses scientifically-proven techniques to integrate the mind and body in this process. We use anatomical imagery and metaphorical imagery as well as touch and movement to activate and enhance both the brain-to-body and body-to-brain communication.

For therapists, who tend to be more kinesthetic anyway, the approach also explores advanced functional anatomy that is often difficult to understand when simply read about or taught. The embodied anatomical study allows the therapist to truly experience for themselves concepts such as tensegrity, structural organization, central axis, intrinsic balance, motion with stability, etc. as well as specific bone rhythms and myofascial function such that they can better facilitate more specific change for their clients.

**Central Axis Exercise**

This exercise is part of the Franklin Method™ trainings and is the best way that we have found to help our clients understand and feel “the Line”. As you more tangibly and clearly experience the central axis, the body organizes itself structurally and functionally around it, allowing healthy structure and expression of movement to emerge.

**Functional Theory**

The functional lens we will be using for muscle, fascia, posture, and movement restriction looks at the central nervous system as the controller of tension.
In human movement, the body is always going through cycles of acceleration and deceleration, pronation and supination, loading and unloading, and eccentric contraction and concentric contraction. As the function of the body has been studied more in depth, many have found that the body does not move in individual parts nor are there any antagonistic muscle relationships in the body. When it is properly balanced, every body part is loading and unloading synergistically, working together efficiently for movement and stability.

To understand the function of the body better, consider the three planes of motion that a healthy body uses. Every body part and joint must be able to move through all three planes of motion at the same time to have efficient movement, expression, and overall wellbeing.

**Sagittal Plane**
Sagittal plane motion refers to any movement where the body is going forward and backwards or bending anteriorly and posteriorly, more specifically known as flexion and extension.

**Frontal Plane**
Frontal plane motion is when a certain body part is moving in a side-to-side manner or motion. Abduction and adduction are typical frontal plane motions.

**Transverse Plane**
Transverse plane motion is any rotational or twisting movement that the body or body parts go through.

Most natural human movement is a combination of several or all planes of motion at once. The body is most liable to become injured or experience pain, when a muscle, joint, or body part is restricted. If the body feels that it is weak, uncoordinated, or unstable, it will protect itself from injury by tightening up muscle and fascia to keep from being injured. It knows that if it goes too far in one plane of motion, it may not be able to decelerate the movement, stop, and return safely.

**Thoracic Spine Dynamics**
We were inspired to put our 3-Day Structural Dynamics: Thoracics, Chest, Abdominals, and Shoulders class together after becoming educated on the function of the thoracic spine and realizing its significant impact on other areas such as the neck, lower back, shoulders, and hips. Our intention is that through this class students will come to appreciate the intricate influences and effects of a healthy and fully functioning thoracic spine.

It is important to note that the thoracic spine does not live on an island. Its function and structure is affected by many structures elsewhere in the body and vice versa its function...
impacts other dynamics in the body. The vertebrae and vertebral column are controlled and supported by the myofascial system and, unless they receive direct trauma, are secondary as a cause of pain and dysfunction. The upper body is designed to be highly mobile and expressive while also maintaining an upright relationship to gravity and structural support for organs, spinal cord, and breathing. The thoracic spine is central to this ongoing balancing act as are the muscles and fascia providing its stability and motion. Working to restore thoracic spine mobility and function is a key to restoring intrinsic balance, dynamic alignment, and proper function throughout the body.

**Abdominals**
The abdominal muscles often become locked short due to lack of extension in the body or poor workout philosophies and mechanics. When the body does not have proper coordination or flexibility to allow the abdominal muscles to eccentrically load properly, the body will keep itself in a flexion pattern which will constantly overload the back muscles and lead to poor extension in the thoracic spine.

We will be experiencing different abdominal movements/embodiments/exercises to help understand true abdominal muscle function especially in eccentric contraction and loading. A lot of athletic training past and present has included abdominal training that can actually inhibit and shorten the abdominal muscles and fascia. Standard crunch, plank, and leg lift maneuvers actually train the abdominal muscles to be functionally short and weak in the actual function and range of motion that they need to perform in daily and peak athletic movements.

**Stomach**
Many times pain or tension in the thoracic spine can be eliminated by massaging stomach spasms or helping the stomach come back into its natural position. Because of the ligaments and attachments of the stomach, tension here will refer pain and restriction directly to the thoracic spine.

To help relax the stomach we will be merely massaging the stomach to release any spasms and to help it come down from the diaphragm if it has migrated up due to stress or other factors. We will not be covering this technique in the class as that is part of our Visceral Dynamics training.

**Standing Thoracic Release**
If we want to help our clients’ bodies use extension in their everyday life, we need to be able to help release the fascia in all three planes of motion so that the nervous system allows for and starts to use the thoracic spine and its myofascia through all possible movement options. Once you assess which side is the most restricted in thoracic extension, you can place your client in a doorway, corner wall, column, etc. facing away from the object you are using for stability. Take your client into rotation to one side and place the same side arm on the object
to help hold the body into rotation. Next reach over the body with the opposite arm to create lateral flexion to the same side. Now that the body is set up in two planes of motion, we will use the cervical spine and pelvis to drive through all three planes of motion and free up/re educate the thoracic spine. Repeat on opposite side.

**Seated Thoracic Release**

As therapists, we do not adjust or manipulate vertebrae. That is a highly specialized skill for those with that type of training (Osteopaths and Chiropractors). We can use the vertebrae as levers to help stretch the myofascial structures and to provide proprioceptive input to the nervous system to help the body restore range of motion and proper structural relationships.

With your client seated, guide them as you follow each vertebral segment to ensure that the supporting structures are allowing it to go through all ranges of motion. As you feel a restriction in the tissues you can hold the vertebrae and help guide the person’s thorax through the ranges of motion to get the desired releases to restore proper fascial balance and release.

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**Structural Dynamics of the Thoracics, Chest, Abdominals, & Shoulder 3-Day Training**

Understand the dynamics of the thoracic spine and associated myofascia and structures, and learn to restore intrinsic balance, dynamic alignment, and function throughout the body.

**Other Structural Dynamics Training Topics Include:**

- Pelvis, Upper Leg, & Lumbar Spine
- Foot and Lower Leg
- Cervical Spine, Shoulders, & Arms

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- Visceral Dynamics
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