

Let's return to some basics in anatomy & physiology that supports the notion that placing your awareness and working from the "inside-out" facilitates the healing process for our clients. Appreciating the influence of the phrenic nerves has assisted me to serve my clients with chronic problems. The very nature of chronic illness and pain requires that the body somehow distribute both the internal physiological pressures within it and the external musculoskeletal strain placed upon it.

My clinical experience has consistently demonstrated that the diaphragm muscle and its phrenic nerves together are one of the body's primary circuits for distributing strain. The phrenic nerves are the sole motor nerves of the diaphragm muscle. These two nerves begin in the neck and are the direct efferent supply to the diaphragm. Its afferent system however, is extensive as it receives sensory supply from all of the following sources; the peritoneal sac, the gall bladder, the capsule of the liver, the pancreas, the pericardial sac of the heart, the pleurae of the lungs and from the subclavius muscles(1). Wow ! That's a lot of current to handle.

Distribution of strain and allocation of resources are crucial components of physical healing. The notion of compensation within the musculoskeletal system when one has experienced an injury is a simple way to conceive of what is meant by distribution of strain. But it is only the tip of the iceberg. Allocation of resources refers to the body's remarkable genius to commandeer energetic and nutritional sources to support general physiology during times of increased demand. The body does all of this and more but, often at a price which lowers the quality of our lives.

What few have made sense of is that the pain in your client's neck may actually be emanating from their gut tube, heart or lungs, and may even be a major contributing source of their pain or the numbness in their shoulder, arms, elbow, wrist, or fingers that just won't go away.

How does that happen, you might ask? The phrenic nerves exit the spinal cord from C3, C4, and C5. This overlaps and shares the circuitry within the spinal cord of the brachial plexus C4 – T2, the origin of the neurocirculatory supply to the upper extremities.

Conceive of water filling up within a sink, which, if not diverted back into the drain pipe, overflows the container. Thus, tensions within the organs of the "phrenic circuit" build to a tipping point and spill over into the relationships of the brachial plexus and are expressed as symptoms in the neck, upper back, and/or upper extremities.

How many times have you used, or heard the phrase, "I've had it up to here!" as an expression of feeling stressed, exasperated, or overwhelmed. Often, people actually raise their hand to the level of their chin, which interestingly is approximately the level of the 4th cervical vertebra.

Let's remember, that I have previously described the stereotypic effects of stress as the "cringing of the body's sacs and a shortening & narrowing of its tubes"(2). Three of the four major sacs within the body feed direct sensory supply into this phrenic circuit.

Image what happens to body posture when the large sac within your abdomen cringes. Feel it within your own body. Next, add the cringing of the sacs of the heart and lungs, a shortening of the esophagus (the major tube between the head and the abdomen), and now, add the

tightening of the diaphragm and a shortening of one or both of the iliopsoas muscles. Where do you feel the strain? Obviously, in the back and/or, the neck. The head and neck are literally being pulled forward and down. The entire extensor reflex system is activated from the occiput to the sacrum. Little wonder that our clients present so often with neck and upper, middle, or lower back pain.

Make the connection within your own body. Tensions from within are distributed, expressed, and discharged into the musculoskeletal system, from the “inside-out”. More specifically, these tensions are shared across as broad an area as possible for as long as possible until the pressure builds to where this distribution of strain affects the allocation of resources to the point that physical, energetic, or psychological symptoms emerge and become chronic.

Psychologically, the physical symptoms that you can now relate to the phrenic circuit are strongly correlated with anxiety and depression. The “mind” generates predictions which stimulate our emotions which leads to the cringing of the sacs and the shortening of our tubes. Sadly, the mind is organized to predict negative outcomes under the guise of protecting us (3). Over time we become tied up into knots, anxious about what might happen then becoming depressed that we can’t make any significant changes for ourselves. The cycle repeats itself over and over in so many of our clients’ lives.

It is my consistent clinical experience that phrenic relationships are associated in most upper extremity dysfunction & pain syndromes. It is only a matter of degree. This includes cervical dysfunction and pain, frozen shoulder, encapsulitis, chronic rotator cuff problems, and radicular symptoms (pain and numbness) into the arm, elbow, wrist, hand, and fingers. These reflect the build up of the tensions within the phrenic circuit and the body’s attempt to distribute the strain.

What is the source of our stress ? Please refer to the articles co-authored with Lansing Gresham, “Move Your Mind and Engage Your Brain” and “Your Mind Is The Source of Your Stress”. In this article, I am endeavoring to introduce the anatomical relationships that have consistently assisted me to serve my clients. More in-depth anatomical descriptions of the relationships of the phrenic circuit will follow.

#### References:

Gray's Anatomy, Williams, Warwick, Dyson, and Bannister, Churchill Livingstone, 1989 and course notes with Dr. Jean Pierre Barral D.O., 1987 - 1993.

“The Inside-Out Paradigm, Equalizing the Pressure”, Dale G. Alexander Ph.D. L.M.T., *Massage Therapy Today*, March 2005, Vol. 05, Issue 03.

“The Mind is the Source of our Stress”, Lansing Barrett Gresham and Dale G. Alexander Ph.D. L.M.T., *Massage Today*, Volume 6, Issue 4.