Facilitating Change with Myofascial System

By: Mark F. Barnes, MPT

One of the primary goals in PT is facilitating change in the body's tissues to promote painfree, quality movement.

Much if not all movement dysfunction arises from adaptations the myofascial system makes in response to trauma; either morphologic (connective tissue), physiologic (neuromuscular), or a combination of the two.

It is only imagination that separates these two components. The myofascial structures are a part of a system and have to be viewed as components of a communication network that is extremely responsive to input - in the form of trauma or appropriate facilitation techniques like Myofascial Release or neuromuscular therapies.

The tissues of this system make up the bulk of the body's tissue. It would make perfect sense that there would be communication between these components. We can no longer separate the nervous, muscular and connective tissue systems if we are to be successful in our attempts to facilitate change in any one of these parts.

A model of the way these tissues communicate within and between their surroundings, the rest of the body, has to be incorporated into our paradigms of operation. The term itself, myofascial, denotes the interrelated nature of connective tissue and neuromuscular systems.

This relationship has been studied by scientists, having as its fundamental components the connective tissue extracellular matrix (ground substance), and the autonomic nervous system.

From a general perspective, this type of communication system is termed biocybenetics. Cybernetics itself is being studied and incorporated into many disciplines ranging from medicine to astronomy. In short, cybernetics is the study of regulation, control and the transmission of information. This applies to living organisms as well as machines and has an operating principle of intermeshed networks of feedback control circuits.

The work in this area was started in 1948 by N. Wiener. Fascia as a system and the importance of understanding it was recognized long ago by the founder of osteopathy, Dr. A.T. Still. He stated:

"As soon as we pass through the skin we enter the fascia. In it we find cells, glands, blood and other vessels, with nerves running to and from every part...I know of no other part of the body that equals the fascia as a hunting ground. I believe that more rich, golden thoughts will appear to the mind's eye as the study of fascia is pursued than of any other division of the body...By its action we live and by its failure we die."

It is theorized that the alterations in tissue texture and tension, resulting from Myofascial Release techniques, come from dynamic changes in the connective tissue and neuromuscular systems. As an individual incurs trauma to this system - either microtrauma over time or acute - many changes take place in the myofascial complex including the solidification and thickening of the ground substance and the increased production of collagen fibers.

The effects of this, in the long-term, are detrimental to the functioning and efficiency of the myofascial tissues. These fascial restrictions can create abnormal strain patterns that can pull the osseous structures out of proper alignment or too close together, resulting in compression of joints producing pain and/or dysfunction.

Neural and vascular structures can also become entrapped in these restrictions causing neurologic symptoms or ischemic conditions. The foreshortening of the muscular component of the myofascial fascicle can limit its functional length, reducing its strength, contractile potential and deceleration capacity.

Facilitating positive change in this system would be a clinically relevant event.

Myofascial Release and Myofascial/Osseous Integration techniques have as their goal facilitation of optimal functioning of the myofascial complex. Myofascial Release does this by applying a low load, long duration stretch into the hydrostatic/colloidal myofascial tissue. The fascial system is used as a handle or lever to relieve the pressure of pain-sensitive structures and/or mobilize the osseous structures.

Myofascial/Osseous Integration is the combination of Myofascial Release and osseous mobilization with the aim of restoring bony alignment. This is done by utilizing the osseous structure as handles or levers to free the skeletal structures and the surrounding environment: the myofascial system.

Both techniques are clinically powerful in facilitating change in the myofascial complex. Fascial restrictions do not release quickly and these techniques are performed slowly following the fascial releases three-dimensionally for lasting elongation of this tissue.

Fascia with its various components is ubiquitous. The ground substance surrounds every cell and its state determines the functional capacity of each cell. The collagen gives us support, shape and stability. Finally, the elastin gives us dynamic flexibility.

The importance of this system cannot be ignored and facilitation of change in the myofascial/osseous structures is paramount to promoting health and well being in our patients.

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