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Structural integration as a method holistic impact on the myofascial system

Integracja strukturalna, jako metoda holistycznego oddziaływania na układ mięśniowo-powięziowy

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Abstract

Myofascial tissue in recent years has aroused great interest. Evidenced by the increase in the amount of research on it. Modern studies provide a large amount of information on this tissue. Initially underestimated and imported exclusively to muscle tissue sheaths, modern science reveals a completely new face. Recent studies show that it is involved in the creation of various structures such as the even: straps, ligaments and joint capsules. These results shed a completely new light on the impact of the fascial tissue for organ motion.

For a full understanding of continuity, complexity and the role of fascial tissue for the locomotor system should take into account the distribution of such tissue in relation to the

various "layers", in which it occurs. The overall breakdown is as follows: superficial fascial tissue - reticular, deep fascia, epimysium, perimysium and endomysium.

The concept tensegration, which is derived from a combination of English words and tension- tension integity - integrity, first described by Richard Buckminster Fuller and Snelson Kenteha. Its essence in the simplest way to introduce referring to the building, which consists of rigid elements and flexible joints. Actuation force on any element of the system tensegrational degrades the forces applied to more structure elements. Buildings based on this principle derive a significant resistance to external forces. An example might be the Golden Gate Bridge in San Francisco, thanks to its structure based on the principle can withstand strong earthquakes.

The main objective of the therapist to strike a balance of structural and appropriate arrangement of the various parts of the body in the gravitational field.

Therapy myofascial tissues are very interesting form of therapy. Following through its holistic impact distinguishes it from the classical approach of manual therapy, which focuses mostly on local disturbances. Through the use of this form of therapy it is possible to obtain stable therapeutic effects. Reduction in local or global disturbance of soft tissue tension. Therapy improves posture and pattern of global traffic patterns economy translating into traffic. So that the structural integration is a therapy that is dedicated not only to people suffering from pain. Following through its holistic impact of the success it can be used in people who want to influence the attitude correction. An interesting direction seems to be the use of musculo-fascial therapy in athletes.

Keywords: structural integration; method holistic impact; system myofascial

Admission

Myofascial tissue in recent years has aroused great interest. Evidenced by the increase in the amount of research on it. Modern studies provide a large amount of information on this

tissue. Initially underestimated and imported exclusively to muscle tissue sheaths, modern science reveals a completely new face. Recent studies show that it is involved in the creation of various structures such as the even: straps, ligaments and joint capsules. These results shed a completely new light on the impact of the fascial tissue for organ motion.

Fascia

The fascia is the membranous tissue that is built from two types of collagen and elastin fibers. Schleip in his work from 2012 distinguished three fascial tissue classification systems:

1. The Federtive proposed by the International Committee on Anatomical Terminology, which describes the fascial tissue, the accumulation of connective tissue which is organized in the coating and the film. A characteristic feature is the fact that they are distinguishable during the autopsy. These included organization membranes surrounding internal organs [1].
2. Gray's Anatomy for Students considers as the main criterion is that they are large enough mass of tissue that they are visible to the naked eye. Gray stresses that the fascial tissue tends to interleaving and the formation of so-called loose connective tissue reticularis also known [2].
3. Fascial Research Congress fascia classified as fibrous tissue, for the transfer of tension and stress in the body [3].

For a full understanding of continuity, complexity and the role of fascial tissue for the locomotor system should take into account the distribution of such tissue in relation to the various "layers", in which it occurs. The overall breakdown is as follows: superficial fascial tissue - reticular, deep fascia, epimysium, perimysium and endomysium.

Superficial reticular tissue (fascia superficialis) forms a sort of membrane separating the layer of the skin from deeper tissues. Characteristic of this tissue is also that in addition to the collagen fibers and elastin important element of this layer is the presence of numerous fat cells. The presence of the latter determines the very important functions of the fascial layers, namely thermal protection. In addition, they provide mechanical protection and ensures free movement of the skin relative to the deeper tissue [4,5,6].

Another layer of deep fascia (fascia profunda), which also is made of collagen and elastin fibers. However, in contrast to the superficial fascia it is devoid of fat cells. It is also much thicker compared to the superficial tissues. Deep fascia creates a kind of sheath for the

muscles, vessels and nerves. Besides, in the area of joints is responsible for creating and to strengthen the tendons. Deep fascia is also closely connected with the layer located deeper, These connections are reflected in the intermuscular partitions, aponeurosis and tendons [4,5,6].

In a deeper layer is external perimysium (epimysium). As mentioned above, it is made of the same types of collagen and elastin fibers. But unlike the deep fascia it is much thinner. Its structure includes individual muscles and their heads. It is this layer is the main building block of muscle tendons. It also creates the tendon sheath. External perimysium is therefore a very important element within the musculoskeletal system. It is a kind of intermediate between the muscle bellies of the bone and attachment of the muscle [6].

The next layer is the fascial tissue perimysium (perimysium). This layer is also composed of connective tissue. It is a kind of the sheath for the individual fiber bundles and bundles of muscle. This layer is connected with both external perimysium overlying and endomysial which is situated deeper. This layer together with external perimysium involved in the formation of muscle tendon [6,7].

The last, the deepest layer of the fascial tissue is endomysial (endomysium). The main role of this tissue is to create a sheath for individual muscle fibers [6].

Table I. Distribution of the fascial tissue layers

	Superficial Fascia	Deep Fascia	Namięsna	Omięsna	Endomysial
Latin names or synonyms	- fascia superficialis, - reticular tissue	- fascia profunda	- epimysium	- perimysium	- endomysium
Building	- collagen fibers - elastin fibers - a number of fat cells	- collagen fibers - elastin fibers	- collagen fibers - elastin fibers	- collagen fibers - elastin fibers	- collagen fibers - elastin fibers
Function	- mechanical protection - thermal protection due to the presence of fat cells	- creating muscle sheaths - the creation of coatings for nerves and blood - the creation of tendons and their strengthening	- the creation of a tendon -creating tendon sheaths	- creating muscle fiber bundles - creating bundles of muscle -, together with the formation of tendon namięsną	- establish sheaths for individual muscle fibers
Characteristics	- separates the skin from the deeper tissues allowing it to slide	- is thicker compared with namięsną	- thinner compared to the deep fascia	-	-

Despite the distinction Luigi Steco such the fascial tissue division, should not be considered its various layers as autonomous membranous structures. By the presence of the so-called proteoglycan matrix constructed with all of its layers form a coherent network. This network has a very significant impact on the proper functioning of the motor system [5,6].

Features fascial tissue

On the basis of this description of the fascial tissue, some of the fascial tissue function may be apparent. However, for a full understanding of this issue, here is a systematic division of its functions. The most commonly cited fascial tissue function representation of the division proposed by Kuchera [8, 9]. He inverted the task fascial tissue as 4P from English words: packagnig, protection, passageway, posture.

Table II. Description of fascial tissue function

4 P			
Packaging	Protection	Passageway	Posture
This feature refers to the formation of specific "packages", which sheaths the individual muscles. With this function, the muscles have a specific shape. But more importantly to separate from each other muscle groups allows freedom of movement relative to each other. With this function, the muscles can work independently of each other [8,10].	Fascia due to membranous structure and the type of fibers comprising it creates a kind of protective barrier for the deeper tissues. In addition, due to the presence of fat cells in the superficial fascial tissue, this layer is also a kind of thermal insulation [8,10].	This feature fascial tissue refers to the formation of specific pathways for the nerves and veins, arteries and lymph [8,10].	This feature refers to participate in the shaping of the fascial tissues of the body posture. The role of fascial tissue as a function of shaping body posture, however, is more complex. Even due to the presence within it of nerve endings, pain or proprioceptive [8,10].

In addition to the above-described functions, tissue, myofascial pain attributed to the ability to store posture and movement patterns. This theory is dictated by the results of test experiments which showed the presence of structures of similar construction to the structure of smooth muscle. The results of these tests one can easily determine the breakthrough since it

has the structure of the fascial was considered quite reactive and non-shrinking tissue [11, 12, 13, 14].

Biotensegration

The concept tensegration, which is derived from a combination of English words and tension- tension integity - integrity, first described by Richard Buckminster Fuller and Snelson Kenteha. Its essence in the simplest way to introduce referring to the building, which consists of rigid elements and flexible joints. Actuation force on any element of the system tensegrational degrades the forces applied to more structure elements. Buildings based on this principle derive a significant resistance to external forces. An example might be the Golden Gate Bridge in San Francisco, thanks to its structure based on the principle tensegration can withstand strong earthquakes.

Research on musculoskeletal structures fasciocutaneous-bone man revealed that the construction of the human body shows the tensegrational construction. Because the reference term to the living organism in the literature, this attribute of the construction is referred to as biotensegration. If we treat organ human movement, as a biotensegrational structure it turns out that even the simplest movement of our body produces a number of secondary reactions voltage to other components of the system. Based on the biotensegrational model, traffic analysis and the appearance of pain or restriction of movement to be seen in a much broader sense than in the past [15, 16].

In the light of the latest research, fascial tissue must be seen as an important element influencing the number of disturbances occurring in the human body. Changing the pattern of attitudes, patterns of movement or tension appearing tissue adversely affect the entire organ motion. Examples of the consequences of the emergence of the elements mentioned above is to increase the risk of injury and mechanical overload, increased energy expenditure and deepening increase tissue tension ..

Structural integration

The overall development of research on fascial tissue led to many forms of influence, which are aimed at the reduction of restrictions within it. Of particular importance among them are methods of action aimed at structural integration. Their characteristic is that the effect of treatment is directed at the entire body of the patient and not solely on the

problematic part of it. In this respect, these therapies can be treated as a holistic effect. Another important element is that they are based is biotensegration, understood as the interaction of individual body parts on each other.

Rolfing - overview

Name therapy comes from the name of its creator Ida Rolf. It has developed a therapy whose main objective is to work on the structure of the fascial. The major determinant of therapy is appropriate arrangement of the various parts of the body relative to the Earth's gravitational field. This fascia is a key element here, which affects the therapist. The concept of pain as the patient does not come down to second place. The creator of this method considers that after obtaining the proper arrangement of the various parts of the body relative to the gravitational field, the pain the patient may take somewhat spontaneously [5, 17].

The key element, which is also a determinant of work therapists working this method is to evaluate the postural patient. A functional study evaluated based on range of motion, fluidity of movement and mobility in the contralateral limb, shoulder girdle, pelvic and spine. Therapists working method Rolfing do not focus their work on the chosen problematic element of the musculoskeletal system. In his work, they perform integration of fascial structures throughout the body of the patient. Due to the complexity of this issue therapy of patients is carried out in 10 therapy sessions. A treatment protocol may change due to the needs of the patient. Creating a general regimen allows it to systematize and facilitate substantial work, and thus better achieve therapeutic effect [17].

Cycle 10 therapy sessions is as follows:

Session 1 .: It aims at relaxing the superficial fascia, the release of breath, "separation" of the body tissue of the extremities and the pelvis level arrangement.

Session 2 .: The main goals are: to balance the body tissues and work with the feet and lower legs, improving the position of the stance in an upright position and work on the superficial tissues of the spine.

Session 3 .: In this part of the therapist should work on the side lines of the body from the knee to the neck. One of the main objectives of this session is to achieve a balance of tension between the front and back of the body.

Session 4 .: Through the work in the extremities therapist aims to provide better support for the rest of the body. This session also focuses on balancing the rotation of the lower limbs, work on the charger at the bottom of the spine and pelvis.

Session 5 .: In its assumptions is similar to the session 4. The therapist also works on the front of the pelvis, abdomen deeper coatings and accurate work within the loins.
Session 6 .: Just like Session 4 in this part of the therapist works with the bottom of the pelvis.
Session 7 .: Described as determination of the upper pole focuses on the work of the head of the patient. The main aim of the therapist is to achieve a correct position of the head.
Sessions .: 8-10 are determined as integration. Within them therapist performs the integration of the lower rim, the upper and the entire body [17, 18, 19].

The first three sessions are defined further as superficial sessions. Four more sessions are deep and the last three are the integration of previously obtained results. Work in this model allows for a gradual release of tension in the body starting from the superficial tissues, and ending with deeper.

Rolfing - the main aims and objectives of the concept

The main objective of the therapist to strike a balance of structural and appropriate arrangement of the various parts of the body in the gravitational field. By achieving this, the patient may get a lot of advantages, among which the most important are:
- Improve body awareness. After the impact on the fascial tissue in which a large number of structures proprioceptors, the improvement is the proprioceptive information flow.
- Obtaining a correction within the system osteo-articular and myofascial. Appropriate arrangement of the individual parts of the body relative to each other allows for a more ergonomic and efficient operation of the entire musculoskeletal system.
- Improving the standard posture.
- Reducing the vulnerability of the patient to feel stress and reduce its negative impact on his body.
- Improving the scope and freedom of movement.
- Reduction of pain [18].

Structural Integration in the concept of Anatomy Trains

On the basis of considerations of Ida Rolf it created a very interesting model of therapy that has been proposed by one of her students - Tomas Myers. The main assumptions and the goal of therapy is in line with the original. One of the fundamental differences in this

concept is to consider myofascial system, as the fascial system often also referred to as a tape or anatomical myofascial meridians. Treatment protocol itself has also been modified. Techniques myofascial used in this concept not only based on the movement of hands of the therapist on the fascial tissue of the patient, but also for supporting the treatment by the active movement of the patient [14, 20].

Tapes anatomic

Myers tape proposed by the anatomic form a distinct sequence of the tissue, myofascial pain. The author compares them to the tracks. Just as railway tracks must be continuous, while they need not run in straight lines. An important element, however, is that their depth was maintained. Myers singled in his works following "tracks" fascial:

- superficial tape back.
- tape superficial Front
- side web,
- spiral belt,
- the upper limb band,
- tape functional
- deep front tape [20].

Treatment Protocol

In contrast to the method of Ida Rolf, Tohomas Myers in his concept he proposed 12 therapy sessions. The overall distribution is as follows: the first four sessions focus on the superficial tissues, tissues for the next four core - deeper, and the last four is referred to as integrative sessions.

A series of 12 sessions is as follows:

Session 1 .: Work on the tape superficial front.

.: Working Session 2 on tape superficial back.

Session 3 .: Work on the tape side.

.: Working Session 4 tape spiral.

5 .: Working Session on the lower part of the front strip in depth.

Session 6 .: Work in the trunk deep front tape.

Session 7 .: Work on the deep paraspinal tissues.

Session 8 .: Working within the neck and head deep front tape.
Session 9 .: Integration of the lower limbs within all the tapes running within them to strengthening the standing and walking.
Session 10 .: Integration of tissue within the tape running in the chest and work on breathing.
Session 11 .: Integration of tissues within the strip running around the rim and arms.
12 .: Work Session on the integration of the whole body [20,21].

Summary

Therapy myofascial tissues are very interesting form of therapy. Following through its holistic impact distinguishes it from the classical approach of manual therapy, which focuses mostly on local disturbances. Through the use of this form of therapy it is possible to obtain stable therapeutic effects. Reduction in local or global disturbance of soft tissue tension. Therapy improves posture and pattern of global traffic patterns economy translating into traffic. So that the structural integration is a therapy that is dedicated not only to people suffering from pain. Following through its holistic impact of the success it can be used in people who want to influence the attitude correction. An interesting direction seems to be the use of musculo-fascial therapy in athletes.

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