Creating a Modern Model for the Assessment and Treatment of the Sinew Channels (jingjin): Part 1

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One of the most common reasons Westerners visit acupuncturists is for help with acute and chronic musculoskeletal injury and pain. Often, these patients seek acupuncture treatment after not finding relief from Western medical therapies. While our TCM training does offer insights to help improve injury outcomes, many difficult cases are beyond what an acupuncturist’s training may involve.

Most current acupuncture education has minimal focus on functional anatomy, orthopedic assessment, mechanism of injury and the role that postural and muscle imbalances play in sports injury and orthopedic conditions. This is most likely because these topics have not been part of TCM training since acupuncture schools were founded in the US over 40 years ago. This has produced a population of licensed acupuncturists many of whom do not know how to diagnose, treat and manage sports and orthopedic injuries. A few current post-graduate training programs do teach the combined use of Western-based physical assessments and TCM treatments for musculoskeletal injuries.¹ In the Sports Medicine Acupuncture Certification Program, we believe that information gained from these Western-based assessments can give valuable insight into developing treatment protocols. Every postural dysfunction, muscle imbalance, positive orthopedic evaluation, manual muscle test and range of motion test will provide a set of points that can be used to treat pain and dysfunction. These protocols are combined with the assessment of the individual with a TCM differential diagnosis resulting in a comprehensive treatment plan.

One of the treatment protocols we continue to develop is the use of Western-based physical assessments with the sinew channels (jingjin). We started our exploration with what is written in Chapter 13 of the Lingshu, the only chapter in all of the Nei Jing that discusses the sinew channels.² Some of the descriptions in this classical text delineate sinew channel topography with clarity, however, many of the descriptions are vague and can be left up to great interpretation. There are modern references to the jingjin available that list muscle groups for the sinew channels,³⁴,⁵ but due to the fact that muscles, as described in Western anatomy, were not discussed in the Lingshu, some of the muscles are based on author’s interpretation. It is not an easy task to research and interpret some of the classical descriptions into complete muscle lists belonging to each sinew channel.

We have been working to further develop the sinew channels, and our goal is to develop this into a clear and comprehensive model which is consistent with both traditional Chinese channel theory and with modern Western anatomical research and functional anatomy. This process involves listing the anatomical structures that are in each channel, describing how they are linked, and exploring how each sinew channel functionally interacts with one another to create balanced posture and movement or, when channel imbalance exists, can predispose the body
to injury. Part 1 of this article will discuss how the sinew channels are linked through the fascia and how they communicate from one muscle to the next. Part 2 (in a future publication) will discuss how corresponding sinew channels interact to maintain posture and create balanced movement patterns. Clinical examples will be given illustrating how dysfunction can occur in a sinew channel and in related sinew channels. All of this material will be presented by the authors at the Pacific Symposium in San Diego this Fall.

Anatomically, the sinew channels can be viewed as myofascially continuous structures linked through the fibrous network of fascia (Fig. 1). While anatomy texts list muscle attachments through the tendons from one bone to the next, the reality is more complex: a portion of the mechanical pull that a muscle produces is transferred not to the origin and insertion of that muscle, but through fascial connections to other muscles.6,7,8 It is theorized that these force transmissions communicate proprioceptive information between muscle groups in order to perform coordinated movement.9,10,11,12

In Thomas Myers’ book, Anatomy Trains, Myofascial Meridians for Manual and Movement Therapists, he categorizes these muscle and fascia connections as myofascial meridians. Myers is not using the term 'meridian' to denote acupuncture channels, but, instead is describing interconnected myofascially continuous structures.13 These myofascially continuous structures, linked through a fibrous network of fascia and having a direct connection from one muscle to the next along the myofascial chain, form a close comparison to the traditional and modern descriptions of the sinew channel topography. In other words, myofascial meridians are, up to a point, congruent to the traditionally described jingjin.

David Legge, in his book Jingjin: Acupuncture Treatment of the Muscular System Using the Meridian Sinews, has explored these myofascial meridians to categorize muscles into the sinew channels.14 This source has been influential to our work; however, a review of fascial research,15,16 functional anatomy, ongoing cadaver dissections of myofascially continuous structures,17 and our interpretation of the classical descriptions, have led us to some different conclusions as to which myofascial structures belong to each sinew channel.
The continuous nature of the sinew channels can best be visualized with a simple tensegrity model. The term tensegrity is derived from the term tensional integrity and implies that tension produces the integrity of the structure; the shape of the structure is determined by this continuous tension. The sinew channels act as the continuous tension elements (like the elastic bands in Fig. 2a) and the bones act as the discontinuous compression elements (like the wooden dowels). When the channels are balanced, correct posture is maintained, allowing for efficient motion and adequate space for the organs to maintain health. Postural and muscle imbalances create obstructions in the sinew channels that can lead to pain and dysfunction (Fig. 2b). These imbalances can be tested with western-based physical assessments (Fig. 3) that lead directly to acupuncture treatment protocols.

Strain and dysfunction can be assessed and treated primarily along a sinew channel (for example, as seen in Fig. 2b where the entire blue cord is strained from top to bottom). A clinical example to treat a sinew channel for the common complaint of pain at the levator scapula attachment near SI 13 (quyuan) is described next in this article.

Fig. 2a and 2b: Tensegrity structure which is balanced (left) and imbalanced (right), illustrating some regions that are shortened and others that are lengthened.

Fig. 3: Shortening of the pectoralis minor (LU jingjin) causes scapular protraction indicated by a raising of LI 16 (jugu) when the patient is supine.
Strain and dysfunction can also be assessed and treated along the related sinew channels which are affected (such as the other cords in Fig. 2b, some of which are pulled into a lengthened position and others into a shortened position). Clinical examples of this will be in part 2 of this article and will examine internal/external (biao li), six division (liu jing bian zheng), and midday-midnight (zi wu lü zhu) sinew channel correspondences.

A clinical example of treating the Small Intestine sinew channel for pain at the attachment of the levator scapula in the region of SI 13 (quyuan) will highlight how this technique is applied. Orthopedic evaluation, postural assessment, and palpation should be used to differentiate the cause of the pain and can help the practitioner determine which channel is affected.

The Small Intestine sinew channel is a myofascially linked continuity that includes, from distal to proximal, the following muscles:

- Abductor digit minimi
- Flexor carpi ulnaris (ulnar head)
- Anconeus and Triceps (medial and long head)
- Supraspinatus, infraspinatus and teres minor
- Levator scapula

The practitioner can palpate the motor points of the muscles listed in the Small Intestine sinew channel. If the points are found to be tender, the practitioner can use the traditional needle technique, channel ashi point (jing luo ci) to help release obstructions (myofascial adhesions) in the channel that will help to alleviate pain. It is important to note, the flexor carpi ulnaris motor point has an excellent effect on relaxing the tissue of the levator scapula attachment.17

We feel that expanding acupuncturists’ understanding of the sinew channels enhances therapeutic treatment strategies when working with musculoskeletal pain. There is great value in expanding the clarity of these channels anatomically, and applying the applications we have discussed in this article.

About the Authors
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References


17. Information gleaned from the modular cadaver dissections occurring of the Sports Medicine Acupuncture Certification (SMAC) Program 2012-current.