

# Neck and Shoulder Pain: The Levator Scapulae Muscle

## Abstract

The levator scapulae muscle frequently contributes to neck and shoulder pain, yet is often overlooked by acupuncturists. A jingluo (channel) approach to pain often leads to treatment of the para-spinal muscles along the Bladder channel and the taut bands of the upper trapezius along the Gall Bladder channel. However, a small portion of the Small Intestine channel lies on the levator scapulae muscle in the region of Jianwaishu SI-14 and Jianzhongshu SI-15. Stagnation in this area is often missed by practitioners due to general pain and spasm of the neck and shoulder region. This article summarises the diagnosis and assessment of levator scapulae dysfunction so that this common site of stagnation may be effectively treated.

The levator scapulae muscle frequently contributes to neck and shoulder pain, yet is often overlooked by acupuncture practitioners. To achieve best results in treating neck and shoulder pain, one should be well-trained in the diagnosis, assessment and treatment of levator scapulae dysfunction. A jingluo (channel) approach to pain often leads to treatment of the para-spinal muscles of the Bladder channel and the taut bands of the upper trapezius along the Gall Bladder channel. However, stagnation along a small portion of the Small Intestine meridian – in the region of Jianwaishu SI-14 and Jianzhongshu SI-15 – is often missed due to general pain and spasm of the neck and shoulder region. Thus, the site of primary stagnation may remain untreated.

Realistically speaking, cervical and scapular pain can be quite complicated to treat. While the levator scapulae muscle may not be the sole cause of a patient's problems, the simple techniques that follow may benefit many patients whose chief complaint is neck and shoulder pain. Practitioners may need to use other points, treatments and techniques, but should not overlook the levator scapulae.

The origin of the levator scapulae is at the transverse processes of C1, C2, C3 and C4. It inserts along a broad portion of the superior angle of the scapula.<sup>1</sup> While the Bladder channel follows the para-spinal muscles lateral to the vertebral column, the pathway of the Small Intestine channel lies along the levator muscle. The points Jianwaishu SI-14 and Jianzhongshu SI-15 are in the region of the scapular attachments. Fengchi GB-20 and Tianzhu BL-10 are in the region of the attachments at C1 and C2. The extraordinary point M-HN-30 Bailao is adjacent to the portion of the muscle in the region of C5.

The action of the levator scapulae provides insight

into the signs and symptoms frequently reported by patients. When the neck is 'fixed', the levator elevates the scapula. With the scapula 'fixed', it laterally flexes and rotates the neck.<sup>2</sup> Noted as the 'stiff neck' muscle by Dr. Janet Travell, the levator is responsible for torticollis when in spasm.<sup>3</sup> The patient presents with the neck laterally flexed or inclined to the side of pain and the shoulder elevated. Many practitioners find ashi points and muscle tension in the upper trapezius around Jianjing GB-21 and Tianliao SJ-15, concluding that treatment of the Shaoyang channel is indicated. While these points may provide benefit, the primary stagnation in such cases is actually in the levator muscle along the Small Intestine (Taiyang) channel.

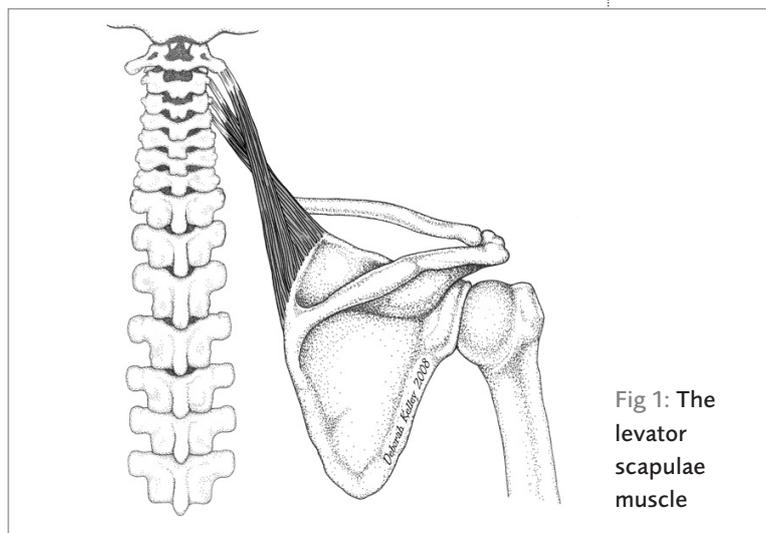


Fig 1: The levator scapulae muscle

For acute cervical sprain and strain - including torticollis with symptoms of neck stiffness - treating the levator scapulae is the obvious first choice. However, chronic one-sided neck pain may also benefit from this protocol. Remember these basic clinical features of levator involvement:

By: Whitfield Reaves

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- Pain is often one-sided.
- Pain may be accompanied by stiffness and/or spasm.
- The upper cervical region feels 'out of alignment'.
- Elevated scapula on the side of pain.
- Neck may be flexed slightly laterally to the side of pain.
- Discomfort when laterally flexing to the side of pain ('put your ear toward your shoulder').
- Discomfort when laterally rotating to the side of pain ('look toward your shoulder').

Palpation is, however, the most reliable diagnostic method. It usually reveals obvious tenderness at Jianwaishu SI-14 and Jianzhongshu SI-15, just above the superior angle of the scapula. Painful and taut bands will often be palpable. While the patient may report and experience pain further up the neck and in the area of the upper trapezius, when these points are palpated they will immediately let the practitioner know!

### Chinese medicine overview

According to traditional Chinese medicine (TCM), acute neck pain involving the levator scapulae muscle is usually diagnosed under the category of accident/trauma. However, trauma may not be apparent when the onset is associated with poor positioning during sleep or postural imbalance. Where the onset is acute - as seen in stiff neck (torticollis) - wind (feng) and cold (han) are usually considered to be the pathogens involved. Chronic neck pain may also involve the levator, although its diagnosis in TCM terms is not as definitive. Treatment of the levator may be included in the treatment of other types of neck pain, including those caused by degenerative changes to the cervical spine, disc disease and cervical nerve root involvement.

### Prognosis

Treat twice a week for three weeks, then re-evaluate. For torticollis and acute stiff neck, expect good results with one or two treatments. In chronic cases due to degenerative spine disorders and disc lesions, treat twice a week for three weeks, then re-evaluate.

### Acupuncture treatment and techniques

The following are several points and techniques to consider in the treatment of the levator scapulae muscle. This protocol is organised into four steps, an approach that is used by the author in sports medicine acupuncture. It makes point selection and needle technique simple, logical and systematic, and is easy to understand for acupuncturists from different traditions and backgrounds.

#### Step one

Using distal points and techniques that may have an immediate effect on the patient, such as a decrease in pain or an increase in range of motion.

#### *The sinew channels*

Shaoze SI-1: Bleeding technique.

Bleeding the jing-well point may be effective for symptoms of pain, spasm and stiffness of the levator muscle. The jing-well point activates the sinew channel (jin jing).

#### *Empirical points*

M-UE-24 Luozhen: While the Chinese texts frequently mention the point M-UE-24 Luozhen, I do not find this point works for a high percentage of patients with stiff neck. However, it is worth a try, as well as any other empirical points practitioners may use for neck pain.

#### Step two

Using channel and microsystem points not located at the site of injury. These are usually distal points, and are chosen based upon signs and symptoms.

#### *The shu-stream point combination*

Houxi SI-3 on the affected side plus Shugu BL-65 on the opposite side.

This shu-stream point treatment often produces significant and immediate relief. Electrical stimulation or ion-pumping cords may be used between these two points.

#### *Traditional point categories*

Yanglao SI-6, xi-cleft point: one of the most effective points for acute cases.

Kunlun BL-60, jing-river point: an effective point for neck pain, which should be considered if Houxi SI-3 or Yanglao SI-6 do not provide relief.

Palpation may assist in the selection of other less-common Small Intestine and Bladder channel points, based upon tenderness.

#### *The Extraordinary vessels*

Houxi SI-3 plus Shenmai BL-62 to activate the Governing (Du) vessel: Treating the Governing vessel may assist if there is cervical nerve root pathology contributing to the condition.

Zulinqi GB-41 plus Waiguan SJ-5 to activate the Girdle (Dai) vessel: Treating the Girdle vessel often benefits neck pain.

#### *Microsystems: auricular therapy*

Local: Neck, Shoulder, Master Shoulder, Cervical Spine.

Zangfu points: Liver.

Systemic points for pain: Shenmen, Thalamus, Adrenal, Endocrine and Muscle Relaxation.

#### Step three

Using points that benefit the qi, blood and zangfu. Although spasm and levator muscle dysfunction are usually not associated with internal zangfu imbalances, the following should be considered:

### Stress

Although 'stress' is not a TCM term, clearly this modern diagnosis affects the zangfu. The levator muscle seems to react to stressful conditions with spasm and active trigger points, which also produces generalised tension in the upper trapezius muscle group. The practitioner may wish to consider which lifestyle factors may be contributing to stress in cases of chronic neck pain.

### Liver imbalances

Liver qi stagnation, Liver yin deficiency and Liver blood deficiency: Liver imbalances may result in susceptibility of the muscles and tendons to spasm. Points should be determined by the practitioner based on both palpation and analysis of the patient's signs and symptoms.

### Step four

Using local and adjacent points at the site of injury or dysfunction.

### The levator scapulae muscle: Jianwaishu SI-14 and Jianzhongshu SI-15

The region of Jianwaishu SI-14 and Jianzhongshu SI-15, just above the superior angle of the scapula, will frequently present one or more trigger points of the levator scapulae. As stated above, Dr. Janet Travell refers to the levator as the 'stiff neck' muscle.<sup>4</sup> I always treat Jianwaishu SI-14 as two paired points (within a zone of one to two centimetres), although the skilled practitioner could probably accomplish the same results with one well-placed needle. The levator is fairly wide where it inserts into the superior angle of the scapula, and this area is inviting to a pair of needles. Insert two needles that are level with each other on the horizontal plane, and spaced between one and two centimeters apart. A second option is to pair Jianwaishu SI-14 with Jianzhongshu SI-15, which is about one cun superior and slightly medial. My preferred insertion is perpendicular, looking for a dense or 'squeaky' feel to the needles as they penetrate into the taut muscle tissue. Carefully palpate the superior angle of the scapula, keeping the needles close to the bone so that you are not tempted to treat the tight bands of the posterior portion of the upper trapezius muscle.

Depth of insertion should be half to one inch and - of course - carefully avoid the lung and pleural cavity. This precaution will affect needle manipulation, as pecking and rotating may be risky if the needle is inserted too deeply. With perpendicular insertion, do not exceed the depth of half an inch (some may choose to needle at a medial-oblique angle); avoiding the pleural cavity and lungs is, of course, the objective.

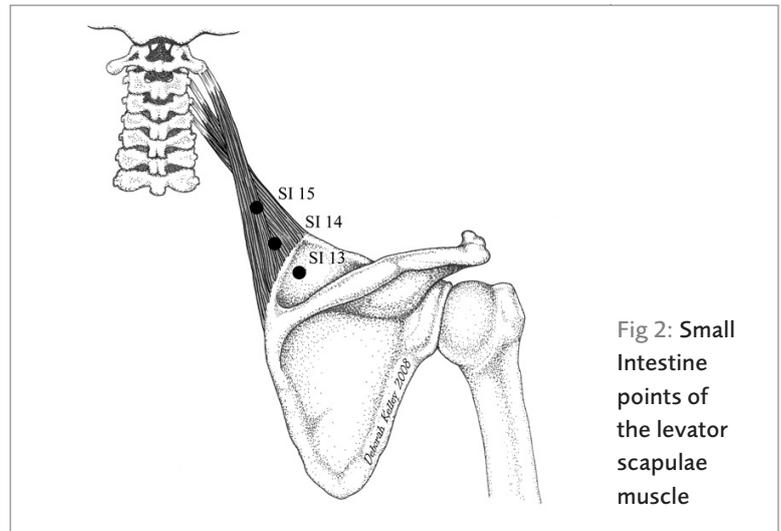


Fig 2: Small Intestine points of the levator scapulae muscle

In terms of anatomy, after a needle has been inserted through the skin and subcutaneous fat, it will pass through a thin portion of the upper trapezius muscle before entering the levator muscle itself; insert more deeply than this and the needle will reach the ribs and pleural cavity. A needle inserted into the levator scapulae muscle is therefore very safe as long as the practitioner does not needle through the entire depth of the muscle - again, a depth of half to one inch is sufficient. Do not hesitate to add electrical stimulation to these points. I have had many patients over the years respond very well to electrical stimulation of Jianwaishu SI-14 and other points on the levator. Some practitioners prefer coupling Jianwaishu SI-14 with a distal point.

In chronic cases of neck tension, I often turn to the technique of bleeding cupping. The presence of taut fascial bands and crepitus (cracking or grating sounds on movement) are suggestive of qi and blood stagnation. This is a perfect case for the bleeding cup. With a lancet, pierce up to 30 times in the region of Jianwaishu SI-14 and Jianzhongshu SI-15. A large-sized cup should fit over this entire zone, and should be retained for at least 10 minutes. Drawing a few drops to a tablespoon of blood into the cup suggests that blood has been invigorated throughout the taut muscle and its tendinous attachment. Follow all the rules of clean and sterile technique, using gloves and proper cleaning and disposal of the equipment.

Patient position is very important in order to get the best access to the point Jianwaishu SI-14. A seated patient, with arms adducted and shoulder depressed, is unquestionably the best position. But, of course, this increases the risk of fainting and needle shock. The lateral recumbent position (side-lying) works equally well. Place the patient on their side, with the affected shoulder uppermost and accessible. After depressing the shoulder and adducting the arm, use a 'hugging'

pillow to help stabilise the upper extremity. The importance of keeping the shoulder depressed cannot be overemphasised (it may tend to elevate during the treatment). This provides the best access to the point and thus improves clinical results.

#### *Fengchi GB-20*

One may take the point of view that pathological wind is the causative factor in cases of stiff neck or torticollis. The pain is of sudden onset and has a radiating quality. Thus, treatment to expel wind with Fengchi GB-20 ('wind pond') would logically follow. In addition, Fengchi GB-20 is an adjacent point for the cervical attachments of the levator.

#### *Tianzhu BL-10*

Like Fengchi GB-20, Tianzhu BL-10 is an adjacent point for the cervical attachments of the levator. In addition, it is the motor point of the semispinalis capitis, an important para-spinal muscle in the cervical region.<sup>5</sup>

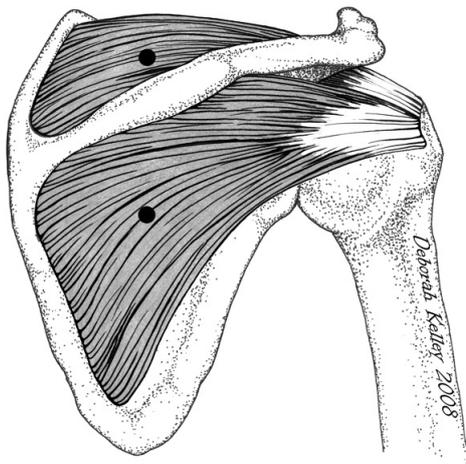
more complex anatomical orientation. At this stage in the development of TCM, many practitioners find that the inclusion of Western anatomy is essential in determining the precise sites of qi and blood stagnation. The example given here of neck pain due to levator scapulae pathology is a prime example of the clinical benefits of including such a Western anatomical perspective, and means that specific muscles - like the levator scapulae - are no longer overlooked in clinic as causes of pain. ■

*Whitfield Reaves*, OMD, LAc, is a nationally certified acupuncturist and has been at the forefront of sports medicine acupuncture since 1981. His clinical experience includes medical care for athletes at the 1984 Olympic Games in Los Angeles, as well as numerous triathlons, and skiing, running and cycling events during the last 25 years. In 2009, Whitfield published *The Acupuncture Handbook of Sports Injuries and Pain*, which is the compilation of more than 25 years of clinical experience treating competitive athletes. Whitfield Reaves can be reached at [www.WhitfieldReaves.com](http://www.WhitfieldReaves.com).

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**Fig 3:** The secondary scapular points Bingfeng SI-12 (in the supraspinatous) and Tianzong SI-11 (in the infraspinatous)



#### *Bingfeng SI-12: The supraspinatous*

The supraspinatous is often involved with levator spasm and dysfunction. Bingfeng SI-12 ('facing the wind') has the action of dispelling wind and should be considered as a secondary point.

#### *Tianzong SI-11: The infraspinatous*

The infraspinatous is often involved with levator spasm and dysfunction. Consider Tianzong SI-11 as a secondary point.

#### Final remarks

Acupuncturists are always looking to refine their treatment protocols for treating neck and shoulder pain. While the levator scapulae muscle may not always be the primary cause, it often contributes, and is frequently overlooked by acupuncturists due to its

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