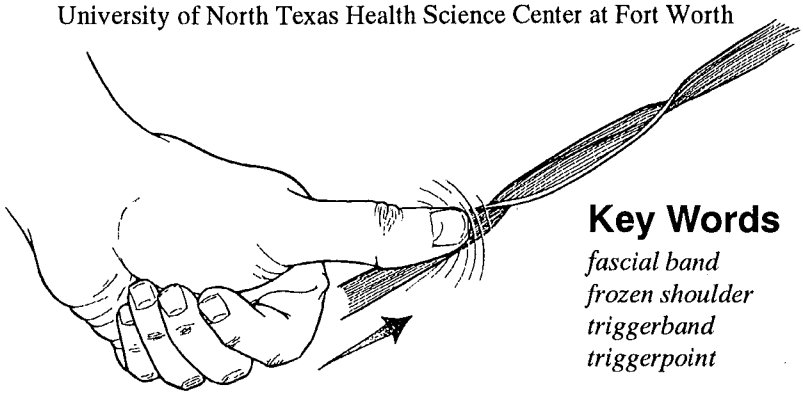
Triggerband Technique

by Stephen Typaldos, DO, Fort Worth, Texas
The Manual Medical Center of Fort Worth
Illustrations by Gina Belsito,
University of North Texas Health Science Center at Fort Worth



Key Words
fascial band
frozen shoulder
triggerband
triggerpoint

Abstract

Triggerband Technique is a soft tissue manipulative approach that is used in the treatment of acute and chronic musculoskeletal pain and dysfunction. It is based on the premise that distorted or injured fascial bands are the cause of many types of musculoskeletal discomfort and that correction of these distortions will result in a reduction or elimination of both the pain and the somatic dysfunction.

Trigger-band Technique is a treatment for acute syndromes, such as lumbar sprain, whiplash injuries, headaches of a nonorganic nature, 'pulled muscles' and other athletic and nonathletic musculoskeletal problems. In addition, many chronic pain syndromes such as failed back surgery, frozen shoulders, 'arthritic-like' pain, 'pseudo-sciatica' and fibromyalgia often respond to this therapy.

Fascial Band Distortions in Musculoskeletal Pain

There is an extensive network of fascial bands in the human body. Except for the iliotibial tract, few fascial bands have been named or described previously. In 1990 Gerlach and Lierse[1] documented the existence of fibrous fascial bands in the lower extremity. See **Figure 1**.

From their drawings it can be seen that the fascial bands are interconnecting and interwoven. Because of this, fascial distortions can travel long distances and have what seem to be bizarre patterns of pain that do not follow known neurological, muscular or dermatome pathways.

Fascial band distortions can occur in different varieties. Some effect the fascial 'plane', others result in 'triggerpoints', and still others are predominantly bandular. However, I shall limit my discussion here to those that are most important for the physician learning Triggerband Technique. The most common of these is a 'triggerband' which is defined as a distorted fascial band that has become twisted, torn and shortened. This occurs during injury when some or all of the fibers become altered. See **Figure 2**.

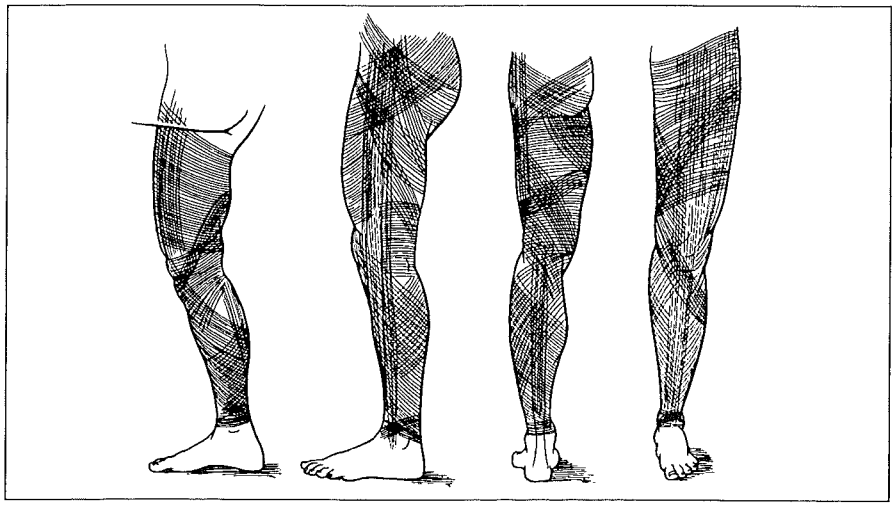


Figure 1

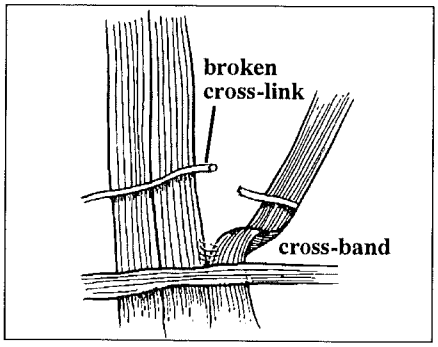


Figure 2

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Normal Fasical Band

Acutely Injuried Fascial Band

Chronically Injured Fascial Band

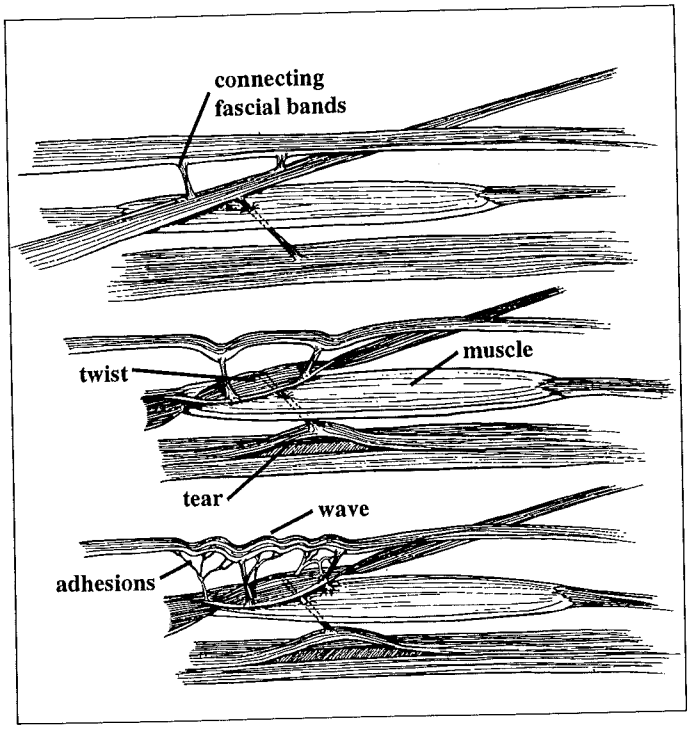

Figure 3

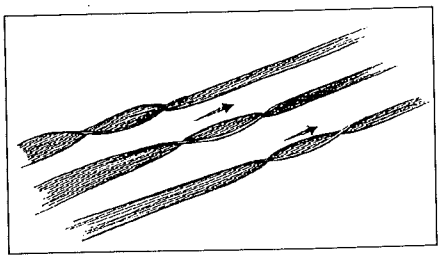

Figure 4

Both acute and chronic triggerbands are treated the same way, by manually untwisting the twist, straightening the band, reapproximating the tear and smoothing out the distortion. The difference is that in chronic pain the adhesions also must be broken making it much more painful. Please refer to **Figure 5**.

To be able to understand this concept better, it is beneficial to know the 'anatomy' of a triggerband. All triggerbands have certain components which include a 'tear', a 'twist'* and, in many cases, a 'wave'. In chronic pain 'adhesions' also occur. Examples of an 'acute pain' triggerband and a 'chronic pain' triggerband are shown in **Figure 3**.

Note that in acute pain, the twist can move up and down the entire band as shown in **Figure 4** and at times seems to 'jump' from one area to another.

This does not occur in chronic pain because the adhesions are holding the twisted band firmly in place. In chronic pain the number of adhesions gradually increases. As this occurs the patient will feel "tightness" and experience a loss of flexibility.

*or other triggerband subtype as shown in Figure 6.

Correct the twist by pushing until it is completely untwisted

Acutely Injured Fascial Band

Chronically Injured Fascial Band

Corrected Fascial Band

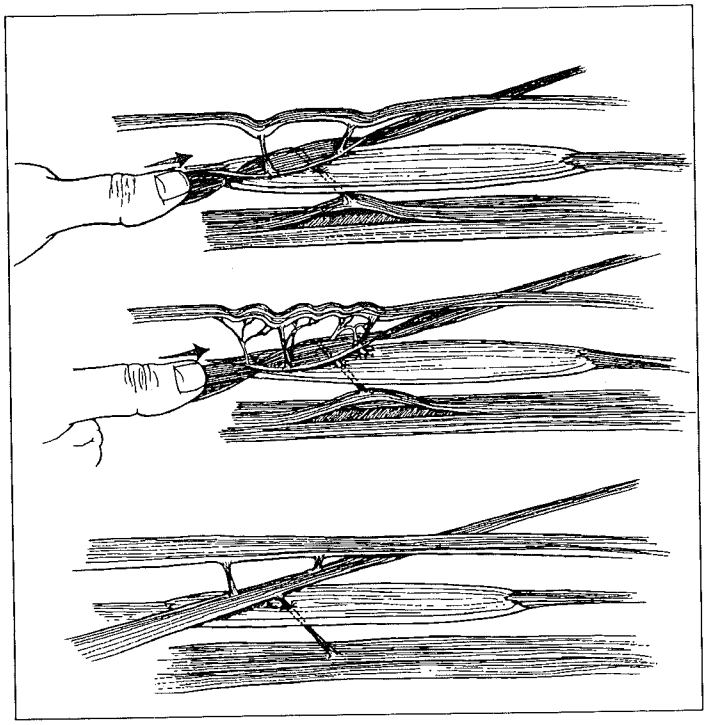

Figure 5

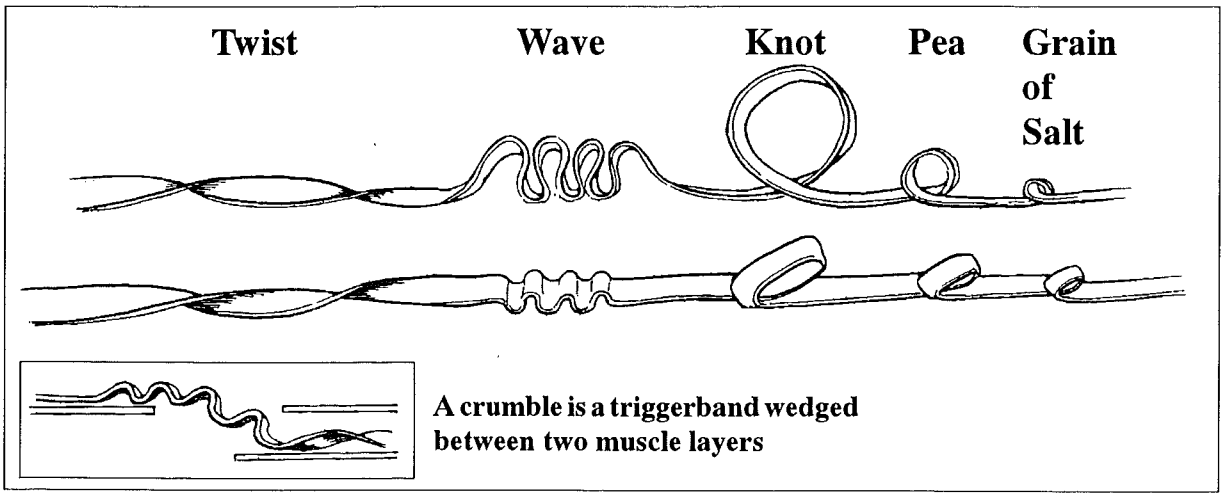

Figure 6

Triggerbands and Triggerpoints

To use Triggerband Technique, the physician first must be able to palpate a triggerband. When it is encountered, a triggerband may feel like any of those shown in **Figure 6.***

There are many other types of fascial distortions, some of which are discussed in detail in the accompanying paper *Introducing the Fascial Distortion Model.* Two of the most common are 'Banded Pseudo-Triggerpoints' and 'Herniated Triggerpoints' which are illustrated in **Figure 7**. Banded Pseudo-Triggerpoints occur when two or more triggerbands overlap. Correcting them requires following first one of the distortions and then the other. They are not actually triggerpoints per se but are an overlap of two distorted fascial bands. Herniated Triggerpoints are most common in the abdomen and are corrected by forcing the underlying material that has become 'trapped' in the distortion down below the fascial plane. Herniated Triggerpoints occur in two varieties and are described and compared in the fascial distortion model paper.

Triggerband Technique and the Physician

Triggerband Technique is a potentially painful modality for the patient. This is especially true in chronic pain. Fortunately, it is rare that patients refuse the treatment because of this. Once the treatment begins almost all patients will sense intuitively that the treatment is both appropriate and necessary. It is important that the patient and the physician realize that Triggerband Technique is normally a painful procedure and that generally the more subjective the patient's severity of pain is, the more helpful the treatment may be.

Another point to consider is that Triggerband Technique can be painful for the physician as well. The physician's thumbs may become tired and sore. Therefore, it is the advisable that the physician not attempt too many treatments in the early stages until the hand and thumb muscles have had a chance to strengthen.

When using Triggerband Technique no lotion or gel should be used on the patient's skin. Lotions or gels decrease friction and allow the fingers to glide over the skin. In Triggerband Technique it is necessary to use that friction to move and correct the underlying structure.

Some patients may complain of having their hair pulled during the treatments, and it may be necessary to shave the affected area to reduce their discomfort. This occurs normally in only particularly 'hairy' men, with the thighs and legs being the biggest problem.

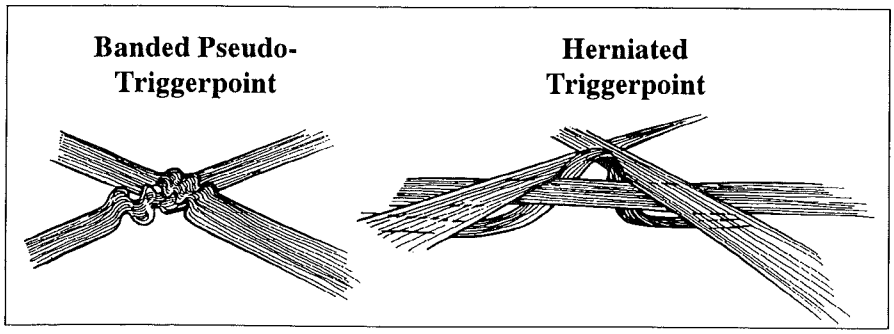

Figure 7

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*For comparison of triggerband subtypes see *Introducing the Fascial Distortion Model.* (JAAO; Summer, 1994)

Indications and Contraindications

The indications for Triggerband Technique are multiple and include most types of chronic and acute pain, back pain, neck pain, headaches, frozen shoulders, 'arthritis-like' syndromes, abdominal pain of a somatic origin and a host of other musculoskeletal dysfunctions of a nonorganic nature. As with all patients that are treated, the proper diagnosis is paramount. Metastatic cancer and multiple myeloma are two of the conditions that I have seen more than once on so-called nonorganic chronic pain patients. The fact that they may have seen many other doctors does not mean that the correct diagnosis was made. In particular, any patient who shows **no** response to Triggerband Technique should be carefully reexamined for an organic cause.

A typical type of chronic pain that may respond to Triggerband Technique is illustrated in a patient that has some or all of the 'Rule of Fours'.

Rule of Fours

- 4 or more years of pain
- 4 or more locations of pain
- 4 or more physicians previously seen
- 4 or more diagnostic procedures previously done
- 4 or more therapeutic modalities previously done
- 4 or more prescriptions given in the past

Contraindications to Triggerband Technique are mostly relative, and a partial list is offered below. Each physician should, of course, use his/her best judgment before employing this or any other treatment modality. Fortunately, I have never seen any complications of the treatment itself, but each physician should be aware that they can occur and could potentially be anything from stroke to phlebitis. Again, each physician should decide what he or she feels comfortable treating with each individual patient.

Partial List of Contraindications

Edema	Cancer
Cellulitis	Previous Strokes
Osteomyelitis	Open Wounds
Vascular Diseases	Aneurysms
Arteriosclerosis	Hematomas
Skin Wounds	Bone Fractures
Collagen Vascular Diseases	Bleeding Disorders
Poor Doctor-Patient Rapport	Litigious Patient Profile
Treatment of Abdomen or Pelvis During Pregnancy	Infectious Arthritis
Osteogenesis Imperfecta	Phlebitis

Side Effects

Pain: This occurs close to 100 percent of the time in nonathletes. Athletes rarely have this complaint. In chronic pain there may be localized tenderness after the treatment for three or four days. In acute dysfunction pain is generally only present during the treatment. Note that any pain after the treatment is much less than the pain during the treatment.

Erythema of the Skin: This occurs close to 100 percent of the time.

Brusing: This occurs in 5-10 percent of patients and is temporary.

Typical Steps in Treating a Chronic Patient

Once the physician has determined that Triggerband Technique is to be employed on a patient, he or she may need to go through specific steps to insure that proper attention is paid to certain details so that mistakes in diagnosis and treatment are avoided. For most chronic pain syndromes several days should be allowed in between treatments and four to six sessions may be needed. Progress should occur at each visit.

1) Rule out organic cause of pain.
2) Review all previous records.
3) Listen carefully to the patient's history.
4) Mentally or graphically map out patterns of pain.
5) Physical examination.
6) Make the proper diagnosis of distorted fascial syndrome.
7) Ask the patient about possible contraindications.
8) Discuss the treatment with the patient, and state in no uncertain terms that it will be painful.

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9) Use Triggerband Technique. Begin by going to the 'Crossband'* of the most painful triggerband.
10) Treat other affected bands.
11) On the second or third treatment consider OMT or other modalities.
12) Give home instructions of *ice,* **no heat**, and other appropriate activities. In chronic pain four days of rest are usually needed in between treatments. In acute pain the patient can usually be retreated in 24 to 48 hours.
13) Answer any patient questions.
14) Record and evaluate progress in the chart by using both subjective and objective criteria.

Clinical Examples of Commonly Seen Triggerbands

Two examples of commonly seen Triggerbands are shown in Figures 8 and 9. Fascial shoulder injuries and their treatments are then discussed in the final portion of this paper. Before treating any fascial distortion first check and record abduction, internal and external rotation, flexion and extension or other motions of the affected area, and then recheck each of these motions at the end of treatment. This demonstrates to the patient objective improvement, so he or she can appreciate your work. Failure to respond means either the diagnosis was wrong, or the treatments were not forceful enough. A complete reevaluation should be done on any atient that does not respond.

Triggerband Technique requires certain palpatory skills that take some time to develop. Be sure to allow the patient to guide your treatment. If you are unsure of where the triggerband is, ask, "Am I on it?" In a short time, with a little practice and experience,

'Star' Triggerband Pathway for Upper Thoracic Pain

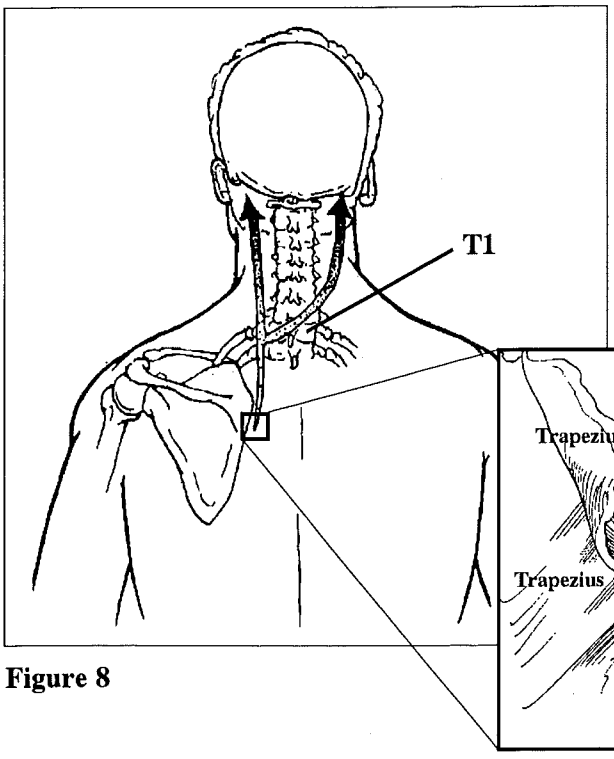

Figure 8

Cadaver Dissection

Pathway for Lower Back Pain with Posterior Thigh Tightness

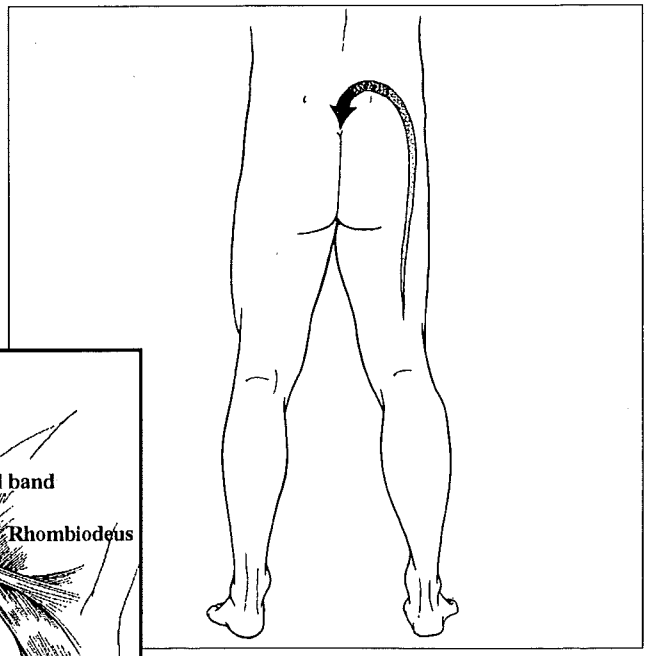

Figure 9

*Crossbands are the anatomical starting place of triggerbands. They are typically strong fasical fibers that are found in the same plane and at an angle to the triggerband. In figures 8, 9, 11 and 12, the crossbands are present where thearrows originate.

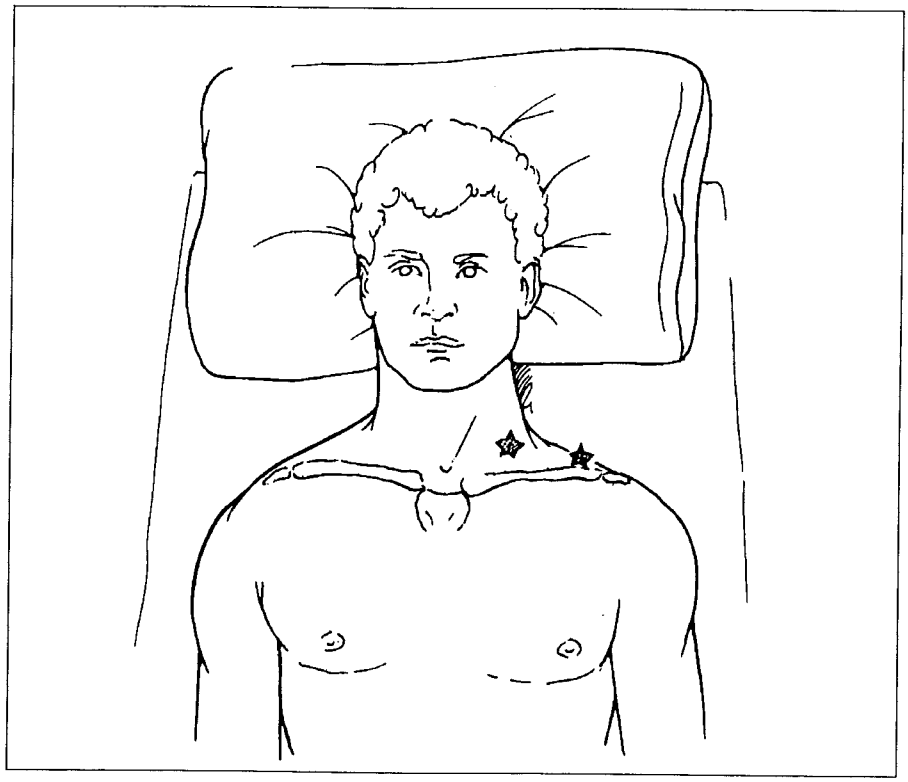

Figure 10

Triggerband Technique can be easily done with a minimal amount of time involved.

Treatment of the Injured Shoulder

Before and after each step check abduction, and internal and external rotation.

Step I: The supraclavicular triggerpoints are shown in **Figure 10** and should be treated in all shoulder pain patients. The medial is far more important than the lateral. Treat the medial first by palpating at the base of the neck between the clavicle and scapula. The amount of tension varies widely. Find the triggerpoint by feeling for an area that feels like a 'boggy marble'. Use firm pressure and push the triggerpoint in a downward and slightly medial direction. Gently 'milk' it as the pressure variant seems to change. Follow the maximum 'bogginess' and hold it firmly. After 15 seconds to 3 minutes (with an average of 1.5 minutes) the triggerpoint will begin to release. This release is dramatic but gradual. It may take as long as one-half minute for the complete release. Hold it with constant or increasing pressure, and 'milk' it until it has completed its entire release. The patient will have a strong sensation of this release as well. The lateral supraclavicular triggerpoint is more difficult to treat and is less important. For most beginners, treatment of the lateral supraclavicular triggerpoint should be skipped.

Step II: Triggerband Technique is the next portion of the treatment. If the pain is anterior in the shoulder along the biceps groove, then triggerband technique is done by using the anterior shoulder pathway. Refer to **Figure 11**. First, find a tender area in the anterior proximal lateral forearm. Then feel for an irregularity in the surrounding fascia. Once this is found, forcefully push it superiorly toward the shoulder. This tender area will move up the forearm, then up the arm and into the bicipital tendon area. Here it will be the most painful. Once it passes the biceps area it will continue to move into the supraclavicular fossa or along the clavicle. Then it will pass up the neck along the margins of the sternocleidomastoid muscle up to the mastoid where it terminates.

Step III: After the anterior shoulder pathway is completed, check internal rotation. Many times it is normalized. If not, ask the patient again where the pain is. If he/she specifies the pain is still in the biceps groove area, then repeat the above **more forcefully.** If instead the pain is more superiorly on the shoulder or more posteriorly, then the posterior shoulder pathway needs to be done. See **Figure 12**. This triggerband begins more laterally and is on the posterior surface of the proximal forearm. It is treated in the same manner as the anterior shoulder triggerband pathway except that it passes along the lateral arm and into the upper margins of the trapezius muscle to the base of the neck. Then it crosses over at T^1 to the opposite side and moves up the neck along the capitus muscle until it terminates at the mastoid. It often becomes buried under the occiput en route to the mastoid. Once this is corrected, check internal rotation again. If it is not normalized ask the patient where the pain is. If it is still in the posterior shoulder area, repeat this triggerband **with more force.**

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Anterior Shoulder Pathway

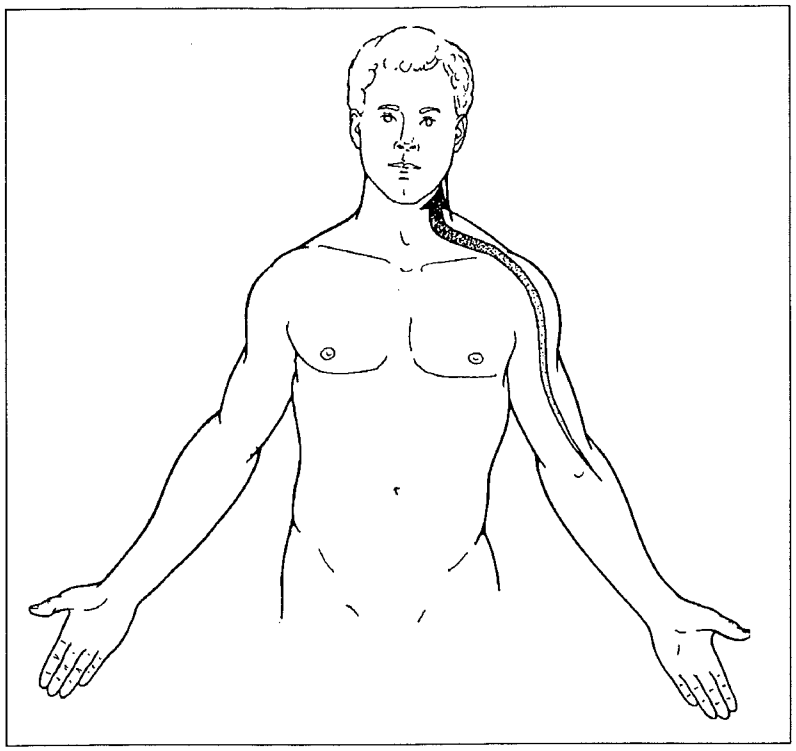

Figure 11

Posterior Shoulder Pathway

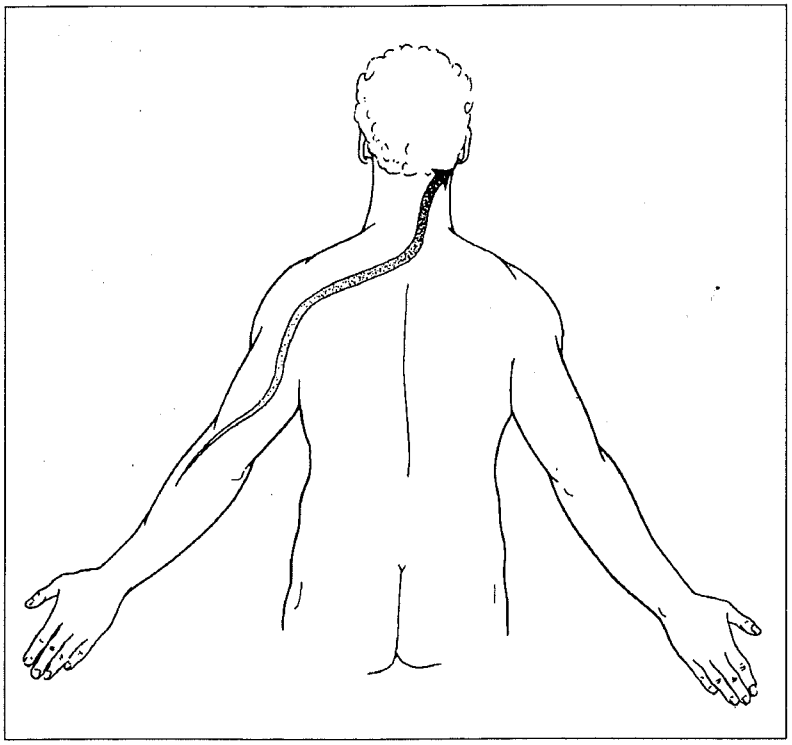

Figure 12

Step IV: Several short triggerbands or continuum distortions* may still be holding the shoulder and keeping it from complete motion. These are commonly found in the positions indicated in **Figures 13a, b, and c**. To treat, first guide the shoulder into the direction of its decreased range of motion and ask the patient to tell you where it hurts. Then while still holding the shoulder in the painful position, place your thumb on the point of maximum pain. Hold that spot until release. Then recheck the range of motion and repeat. Some of these fascial distortions are triggerbands and some of are continuum distortions . If it is a continuum distortion it will release. If it is a triggerband then follow it to the mastoid, where it terminates. The 'star' area often needs to be treated as well. After this step most frozen shoulders are much improved and have normal range of motion.

Step V: Most patients now have normal or close to normal range of motion and have had one, two or three treatments. However, many still feel a slight tightness or tug in the shoulder. These patients should then receive high velocity-low amplitude osteopathic manipulation. First, the thoracic spine should be manipulated in the standing position (hallaluya). Then, thoracic HVLA should be attempted in the chair to correct any lateral fixations. Following this, HVLA in the anterior-posterior direction and the posterioranterior direction to the thoracic spine may be needed.

After HVLA to the thoracic spine, the shoulder should also be

*See accompanying papers, *Continuum Technique* and *Introducing the Fascial Distortion Model.*

manipulated. Have the patient seated pin a chair and stand behind and reach around and grab his/her flexed elbow of the sore shoulder with both palms. As the patient drops the shoulder, manipulate with a quick thrust in the superior-posterior direction. Usually a loud 'crack' or 'pop' is felt or heard. Many times motion is dramatically improved.

Step VI: The patient is rechecked in several days. At times, the entire procedure may need to be repeated. Any shoulder that does not respond should be thoroughly reevaluated. Once corrected, exercises and physical therapy are considerations but are usually unnecessary. At home these patients should practice "dropping" the injured shoulder while watching in the mirror. Ice should be used to reduce the tendemess and any application of heat should be strongly discouraged. ❑

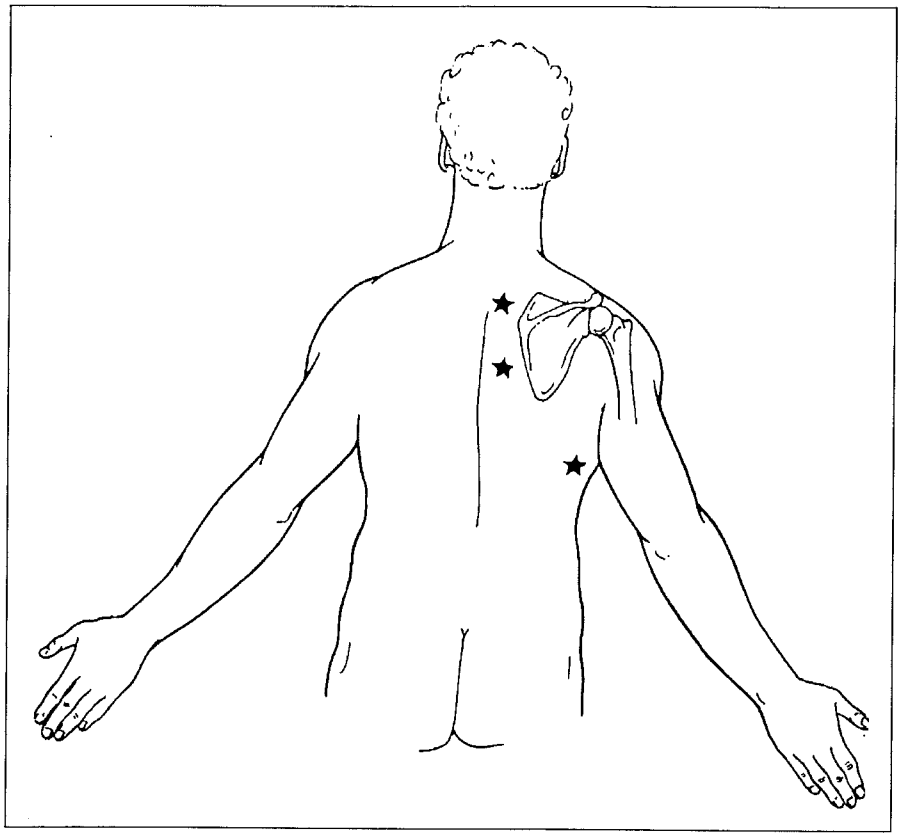

Figure 13a

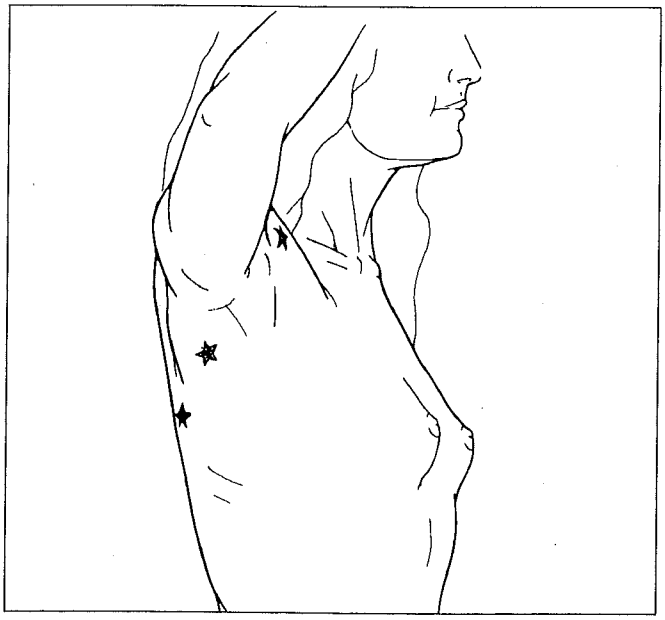

Figure 13b

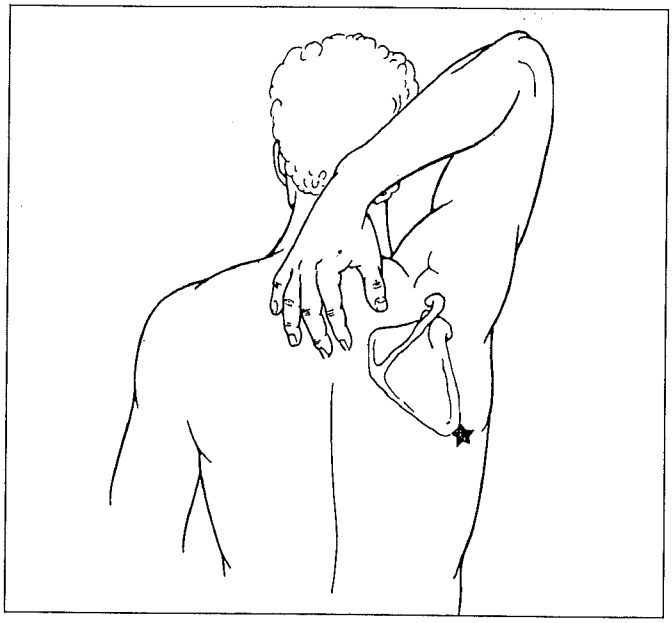

Figure 13c

References

1 Gerlach, U. J., Lierse, W.: Functional construction of the superficial and deep fascia system of the lower limb in man. Acta Anat (Basel) 1990;139(1):11-25.