LIGAMENTOUS ARTICULAR STRAIN TECHNIQUE

Treatment | Education | Rehabilitation

L.A.S.T.
Techniques for the Shoulder

Note:
Knowledge and best practice in this field are constantly changing. As new research and experience broaden our knowledge, changes in practice and treatment may become necessary or appropriate. Readers are advised to check the most current information concerning the frequency, intensity, duration, precautions, indications, and contraindications concerning treatment of patients and their conditions. It is the responsibility of the practitioner, relying on their own experience and knowledge of the patient, to make diagnoses, to determine frequency, intensity and duration and the best treatment for each individual patient, and to take all appropriate safety precautions. To the fullest extent of the law, the author does not assume any liability for any injury and or damage.

Workshop Agenda:
Treatment Techniques for the Shoulder (3hr Course)

1pm-5pm (ish)

1:15pm	Registration, Introduction & Scientific Theory for LAST Relevant Anatomy, CIs, Indications, Precautions, Pathologies, Kinesiology
1:45pm	Anterior Cervical Fascia Costcoclavicular Ligament / Upper Mediastinum
2:30pm	Ant / Post Sternoclavicular Ligaments Subclavius
3:30pm	Corocoid Ligaments Pectoralis Minor / Coracobrachialis / Short Head Biceps
4:00pm	Teres Major / Minor Long Head Biceps GH Capsule
5:00pm	End of day

Forward Thinking

The techniques outlined in this manual are not intended to be used in isolation, but as part of an ongoing process of both local and systemic assessment and treatment. A forward-thinking manual therapy clinician applies the foundational principles of Ligamentous Articular Strain Technique (L.A.S.T.) with the understanding that neurophysiological, biopsychosocial, cardiovascular, and somatovisceral systems all influence biotensegral function, both at the site of symptoms and at distant, seemingly unrelated locations.

Your patient's primary complaint may not originate from the location where the pain experience is experienced. Instead, it may be the end result of a cascade of dysfunctions involving multiple systems. As clinicians, we must train ourselves to "look locally but think systemically."

Too often, care is compartmentalized. Clinicians treat the wrist for carpal tunnel syndrome without investigating whether the problem is the final adaptation in a long chain of compensation, perhaps stemming from an injury years or decades earlier in another region altogether. The body is not a sum of parts, but a unified, responsive system.

We routinely see patients who have been "everywhere," often arriving at our door as their last hope before surgery, or decades after surgical interventions. Their bodies offer us vital information, but only if we take the time to observe, listen, and feel. Too often, this information is overlooked.

Manual therapy, at its core, is the ancient practice of healing through the application of gentle touch. In a world of advancing technologies and protocols, our role remains fundamentally human: to help, to serve, to listen—not just with our hands, but with our eyes, ears, heart, and intuition. Our purpose is to form a meaningful connection with another living being.

As we move forward, let modern evidence-informed science guide your understanding of physiological processes. But also let your clinical intuition, practical wisdom, and—most importantly—your patient's own physiology dictate the pace, direction, and approach of care.

Manual therapy is both an art and a science. Treat the person, not just the pathology. Shift your perspective to working with tissue elasticities, densities, and temperature gradients. Strive for a dynamic, ever-adapting balance within an asymmetrical, nonlinear feedback system.
Keep forward-thinking.

Origins of Ligamentous Articular Strain (LAS) Techniques

Ligamentous Articular Strain (LAS) and Balanced Ligamentous Tension (BLT) are manual therapy approaches rooted in early osteopathic principles, historically referred to as “general osteopathic techniques.” These techniques are primarily indirect, targeting the body’s connective tissues—fascia, ligaments, and tendons—and indirectly influencing lymphatic and vascular flow.

As early as 1915, Dr. Edythe Ashmore—a student of osteopathy’s founder, Dr. A.T. Still—highlighted these methods in her book *Osteopathic Mechanics*. She described two common approaches used by osteopaths: the older “traction method,” which corresponds to LAS, and the newer “direct method or thrust,” now commonly recognized as High-Velocity Low-Amplitude (HVLA).

While the foundational ideas likely originated with Dr. Still, LAS and BLT techniques were significantly developed and refined through the contributions of several influential osteopathic physicians, including W.G. Sutherland, H.A. Lippincott, R. Lippincott, R. Becker, and A. Wales. Over time, regional preferences shaped terminology: practitioners in the central United States (such as Texas) adopted “LAS,” while those in the Northeast (such as New Jersey and New England) favored “BLT.”

BLT techniques are typically characterized by a light touch and often incorporate respiratory cooperation. LAS techniques, in contrast, may use greater pressure—up to 40 pounds—and do not always rely on respiratory engagement. In comparison, BLT usually involves only 1 to 3 pounds of applied force.

Dr. W.G. Sutherland played a pivotal role in teaching and popularizing these techniques. In 1947, he introduced LAS methods to his osteopathic study group, later publishing the material in the 1949 *Year Book of the Academy of Applied Osteopathy* under the title “The Osteopathic Technique of Wm. G. Sutherland.” In this work, he emphasized that osteopathic lesions represent strains within body tissues—especially in ligaments when joints are involved—and he preferred the term “Ligamentous Articular Strain” to describe these approaches. He attributed the conceptual origins of LAS techniques to Dr. A.T. Still.

Building on this legacy, the Dallas Osteopathic Study Group began a detailed exploration of both indirect and direct manipulative techniques in 1982. Notably, Dr. Rollin Becker, a member of the group, had participated in Sutherland’s original 1947 instruction. Their work culminated in published manuals on LAS techniques in 2001 and 2009, further codifying and expanding the clinical application of these methods.

Today, LAS remains a foundational concept in osteopathic and manual therapy education, bridging historical insights with modern clinical application.

A New Perspective

While explanations change, new information is often simply a rephrasing and a refining of descriptions of mechanisms. In the end, it may not change what we do clinically by a great deal - or at all."

– Leon Chaitow ND, DO

"It's not a perverted function but a wrong environment that results in the distorted appearance of function. Function is always true to its environment. Function is dependent upon its environment. Therefore, any change in any part of the environment that is not in tune or balance will apparently distort the function of the matter so involved."

- Thomas Schooley, DO

The information presented in this edition offers an opportunity to expand and modernize the foundational principles first introduced by A.T. Still. Today's clinical landscape demands evidence-informed approaches that not only honour timeless concepts but also reflect advancements in science and practice. This text reinterprets those original principles through a contemporary lens, offering practical, principle-based, and evidence-supported techniques aimed at improving patient outcomes and quality of life.

Some of the traditional concepts, narratives, and terminology may feel outdated when viewed through the lens of modern science, while others have stood the test of time. This text represents a reconceptualization—a revitalization—of Ligamentous Articular Strain (LAS) techniques, integrating them with current understandings in anatomy, physiology, neurology, pain science, psychosocial influences, and regenerative therapies.

As our understanding of the human experience has evolved, so too must our clinical language and approach. Historically, practitioners operated under a reductionist, biomechanical model, often seeing the human body as a machine, where joints act as pulleys and ligaments served as straps. While useful at the time, this metaphor no longer holds. Machines are designed with clear, defined parts. Humans, however, are complex, self-organizing systems shaped by natural selection, with interconnected structures and processes that defy simplistic explanation.

Modern manual therapy requires a shift from seeing oneself as an "operator" who fixes broken parts, to becoming an "interactor" who collaborates with the patient. The interactor model recognizes that successful treatment outcomes are not only influenced by the clinician's hands-on technique but also by the therapeutic alliance, patient engagement, and psychosocial context. The interactor sees the body not as a disconnected set of parts, but as an integrated organism.

This perspective also acknowledges that no single tissue or pathoanatomical issue is solely responsible for a patient's symptoms. Joint injuries affect more than just local anatomy. Ligaments and joint capsules are not isolated structures—they are densified elements of the fascial system, embedded in a body-wide collagenous matrix driven by tension. When injured, these tissues can disrupt communication between joints, muscles, nerves, and blood vessels. They trigger protective nociceptive guarding, alter motor control, and influence both peripheral and central nervous system function.

Ligaments are dynamic, proprioceptive organs arranged in functional series with muscles. Their communication with the CNS via afferent nociceptors and

mechanoreceptors, particularly at ligamentoperiosteal and tenoperiosteal entheses, play a vital role in joint stability, motor coordination, and proprioception. The ligamentomuscular reflex system helps modulate muscular co-activation and inhibit destabilizing movements.

However, injuries to these tissues are not merely mechanical. They influence systemic biotensegrity and contribute to physiological and psychological adaptations. Neuroplastic changes at both the cortical and spinal levels have been observed following joint trauma, suggesting that injury alters how the brain processes sensory information. This can result in persistent pain perception, reduced interoception, impaired motor control, and chronic dysfunction.

These changes are further complicated by psychosocial factors, such as anxiety, depression, and social withdrawal, which can exacerbate symptoms through the release of pro-inflammatory mediators. The clinician must therefore approach rehabilitation as a holistic process, one that considers both top-down and bottom-up influences.

Manual Therapy clinicians are uniquely positioned to assess and treat these complex presentations. Effective care requires more than technique—it requires clinical reasoning that incorporates modern pain science, movement assessments, neurological testing, and biopsychosocial awareness. The goal is not just to treat a lesion but to restore function, modulate nociceptive input, reduce protective responses, and support the patient's journey toward recovery.

Importantly, education plays a central role in this process. Patients benefit from understanding their condition and from being active participants in their care. Teaching them the latest insights into pain science and helping them reframe their experience with practical, personalized strategies can dramatically improve engagement and outcomes.

As clinicians, our task is to remain both scientifically grounded and intuitively responsive—to integrate research, experience, and patient insight into a dynamic, evolving practice. We must treat the person, not just the pathology. We must aim for balance, not perfection. And above all, we must keep forward-thinking.

Changing Perspectives on Treatment

One of the most powerful contributions manual therapists can make is to help restore a patient's hope—hope to return to work, to move with less pain, to play with their children, and to reclaim a better quality of life.

Manual therapy clinicians are uniquely positioned to serve as a "rehabilitative tipping point," offering a turning point in the patient's journey toward recovery. Practicing from an evidence-informed perspective, they integrate current research with clinical expertise to guide effective treatment and meaningful outcomes.

Understanding the physiological impact of ligamentous and joint tissue injuries is essential. These injuries often involve not just local mechanical dysfunction but also nociceptive protective responses that alter proprioception, sensory sensitivity, and motor control. Manual therapy clinicians must be able to recognize and manage these systemic effects to support recovery.

Treatment also requires acknowledging the psychosocial components of injury—emotional, behavioural, and cognitive factors that can compound physical symptoms. The two main manual therapy treatment influences include limiting the degree of non-noxious stimulus that evokes it, which translates into physically protecting the part; that is, not "pushing" outside the limits of tolerance (targeting "bottom-up" mechanisms) & to decrease CSN through cognitive approaches, which speaks to managing other stressors (targeting "top-down" mechanisms).

Effective care may involve collaborating with other professionals, such as counsellors, regenerative medicine practitioners (e.g., prolotherapy), or active rehabilitation specialists to address the full scope of a patient's needs.

Manual therapy has been shown to influence connective tissue remodelling, including changes to fascia, fibrosis, and densification. Manual techniques, especially at ligamentoperiosteal and tenoperiosteal entheses—areas rich in mechanoreceptors—can improve mobility, reduce nociceptive protection, and restore normal tissue sliding and tension.

Manual techniques, particularly those applied to joint soft tissues, have demonstrated positive effects on autonomic nervous system regulation.
These outcomes include:
Reduced sympathetic nervous system activity
Decreased deep tissue pressure sensitivity
Increased pressure pain thresholds
Reduced resting pain perception
Improved proprioceptive and kinesthetic awareness
Decreased muscle tone
Enhanced local blood flow and tissue viscosity

Ligamentous Articular Strain Technique (LAS) is a principle-based, patient-centred, and context-sensitive approach to manual therapy. Designed to address dysfunction in joint tissues and restore functional biotensegrity, LAS helps clinicians engage with both peripheral and central neurological mechanisms that influence the pain experience and movement.

By applying these techniques with a clear understanding of neurophysiology and fascial dynamics, manual therapists can improve both short- and long-term outcomes, helping patients not just feel better, but move forward with renewed confidence and purpose.

Clinical Principles:

Clinical Judgment and Boundaries

The application of L.A.S.T. depends heavily on the clinician's skill, attentiveness, and ability to assess context. Boundaries between indications, precautions, and contraindications may blur based on clinical experience. For example, some practitioners may feel confident treating acute injuries, while others may wait until chronification has occurred. Each clinician must assess both their own and the patient's readiness for treatment on a given day. A mutual understanding of competencies and limitations helps ensure patient safety and minimizes the risk of harm.

Regional Interdependence:

Look Locally, See Systemically

L.A.S.T. is not a localized treatment technique—it is a method of continuous, integrative assessment and care that considers the whole system. Clinicians must recognize that joint tissue dysfunctions are rarely isolated. Neuropsychophysiological and somatovisceral systems can all influence both local and distant structures. For instance, symptoms resembling carpal tunnel syndrome may be the final expression of a chain of dysfunctions that began far from the wrist. L.A.S.T. encourages practitioners to explore not only where symptoms appear but why and from where they possibly originate.

From Palpation to Perceptive Touch

Moving Beyond Traditional Palpation

Conventional palpation often relies on pattern recognition and familiar expectations. Perceptive touch moves beyond this. It involves resting the hands still on the body, not to search or probe, but to listen. It is an alert, observational awareness of the functions and dysfunctions within the patient. This quiet, receptive form of touch engages multiple senses and encourages awareness, rather than action. Information is not extracted but allowed to arise.

Perceptive touch is a cultivated awareness—an observational sensitivity that detects subtle variations in tissue tone, movement, and function. It is an alert, observational awareness of the functions and dysfunctions within the patient. It is through this form of touch that clinicians gather the most nuanced insights, unavailable through any other method.

Reciprocal Tension

As manual therapy practitioners, we primarily seek to modulate the nervous system, especially by reducing autonomic protective responses. Reciprocal tension refers to the normal tensional integrity maintained by neurological reflexes. When disrupted, the tissues resist movement,

creating dysfunctional adaptations. In treatment, applying an equal and opposite force (reciprocal tension) helps restore function.

The amount of force needed varies. An athletic individual with healthy tissues might require up to 40 lbs of matched resistance to engage the reflex mechanism. In contrast, a patient with a connective tissue disorder such as osteogenesis imperfecta might only tolerate gentle ounces. Using too little force may be ineffective; too much may trigger protective responses or cause harm. Skill lies in calibrating the input to match the patient's physiological state.

The Fulcrum Principle

Applying a fulcrum—an intentional focal point of pressure—facilitates change within the body's tissues. A subtle increase in pressure at this point creates a kinetic pivot that encourages the tissue to reveal its underlying patterns of adaptive strain or restriction. Through the fulcrum, the practitioner can sense the dynamic interplay of mobility and motility and detect stress patterns.

Each clinical presentation requires a unique fulcrum. The practitioner must cultivate the ability to sense and interpret the subtle cues offered by the body. This listening-touch enables access to insights that may remain invisible to conventional testing, offering a pathway to understanding a patient's symptoms when lab work or imaging falls short.

By integrating perceptive touch, fulcrum awareness, and the principles of regional interdependence, L.A.S.T. transforms manual therapy into a system of meaningful dialogue between clinician and patient neuropsychophysiology. It is not just about technique—it is about connection, responsiveness, and facilitating the body's innate potential for adaptation and healing.

Disengagement

Disengagement involves gently separating (compressing or decompressing) the opposing articular surfaces of a joint by following the **path of least resistance**—the direction of ease. This process is not confined to a single axis but unfolds across all planes of motion. By continuously refining and adjusting along this path, the practitioner gradually reaches a point of **balance**, rather than working against restrictions or forcing through barriers.

Neutral

Through this guided journey of ease, the tissues eventually reach a point of **suspension**—a quiet, almost weightless state where reciprocal tension is minimal or no longer perceptible. This is the **neutral point**. Borrowed from automotive terminology, "neutral" refers to a state in which the engine is running but not engaged, ready, yet at rest. In manual therapy, neutral is not an absence of engagement but a **state of potential**, a quiet readiness.

This stage requires **skillful patience**. The clinician must quiet the mind, be fully present, and allow the therapeutic information to emerge organically. Rather than striving to impose change, the practitioner must wait for the body's **innate corrective forces** to do the work. The true therapeutic end point is not merely the release of tension, but a **deep, whole-person shift** toward equilibrium.

Treating in this **receptive, meditative** way can be transformative but also challenging. In a world that values speed, certainty, and outcomes, it can feel counterintuitive to wait. The psychological rhythm of modern practice often pushes clinicians toward efficiency: solve the problem, check the box, and move to the next case. But **receptive treatment invites a different tempo**—one that values presence over pace, and depth over immediacy.

Transitioning to this approach may be uncomfortable, especially for those used to directive or mechanical methods. But within the stillness lies the potential for discovery. To treat receptively is to connect deeply with another human being—to listen, to observe, and to hold space for healing in its fullest, most integrative form.

Breathing in Manual Therapy

The Role of Breathing

Breathing is a fundamental physiological process essential for life, but its therapeutic potential is often underutilized in manual therapy. Beyond oxygenating tissues and eliminating carbon dioxide, breathing also plays a crucial role in postural stability, motor control, and the regulation of physiological and psychological processes. It directly affects the autonomic nervous system, circulatory system, metabolism, and chemical regulation.

Research has consistently shown a relationship between altered breathing patterns and musculoskeletal pain, particularly in the back and neck. This is especially important because the muscles involved in posture and breathing often overlap. Dysfunction in one domain can influence the other, creating a cycle of impairment that affects overall function and recovery.

Patients with persistent pain who fail to respond fully to traditional approaches—manual therapy, education, and exercise—may benefit from clinical strategies that target breathing. Changes in respiratory mechanics can lead to altered respiratory chemistry, resulting in smooth muscle constriction, decreased tissue oxygenation, and increased nervous system excitability. These changes can impact every physiological system and may contribute to unexplained symptoms.

Dysfunctional breathing occurs when breathing becomes inefficient or inappropriate for the individual's needs or environment. This dysfunction may result from musculoskeletal restriction, chronic stress, disease, or neurological imbalance. It disrupts homeostasis and may delay healing by maintaining the body in a heightened sympathetic (fight-or-flight) state. As this state becomes chronic, the body's internal environment becomes more acidic and immune recovery is compromised.

Because breathing can be consciously regulated, it presents a unique entry point for modulating physiological function and restoring balance. Breathing therapies aim either to correct dysfunctions or to enhance respiratory function, improving systemic health and resilience. (International Journal of Osteopathic Medicine, 2009)

In short, diminished breathing efficiency undermines physiological potential. Clinicians who incorporate breathing into their assessment and treatment strategies can more effectively support the body's healing mechanisms.

Breathing in Manual Therapy

Ligamentous Articular Strain Technique (L.A.S.T.) aims to change the environment within which dysfunctional tissues are attempting to operate. Breathing is used as a neuromechanical tool to support this shift. Two main approaches involve breath **holding after inhalation or exhalation** to promote tissue release.

Inhalation-Focused Technique

After disengaging and exaggerating the injured or dysfunctional tissues into their direction of ease:

- Instruct the patient to take a **deep, full inhalation**, using both the diaphragm and lungs.
- At the peak of inhalation, have the patient **hold their breath** as long as is comfortably possible.
- Allow natural exhalation to follow.
- Repeat this process as needed until a tissue release or therapeutic change is observed.

Exhalation-Focused Technique

After disengaging and exaggerating the dysfunctional tissues:

- Instruct the patient to **exhale completely**, expelling as much air as possible.
- At the end of the exhalation, ask the patient to **hold the breath out** for as long as is comfortably possible before inhaling.
- Repeat as needed to encourage the desired tissue response.

These simple yet powerful breathing strategies can enhance the effect of manual techniques by modulating autonomic tone, increasing proprioceptive awareness, and supporting the body's natural healing responses.

Common Mistakes / Dos and Don'ts

Do

Remember your principles:
Acute, Sub-acute, Chronic
Listen and follow the tissues/body
Listen and feel for the RECIPROCAL TENSION in the tissues.

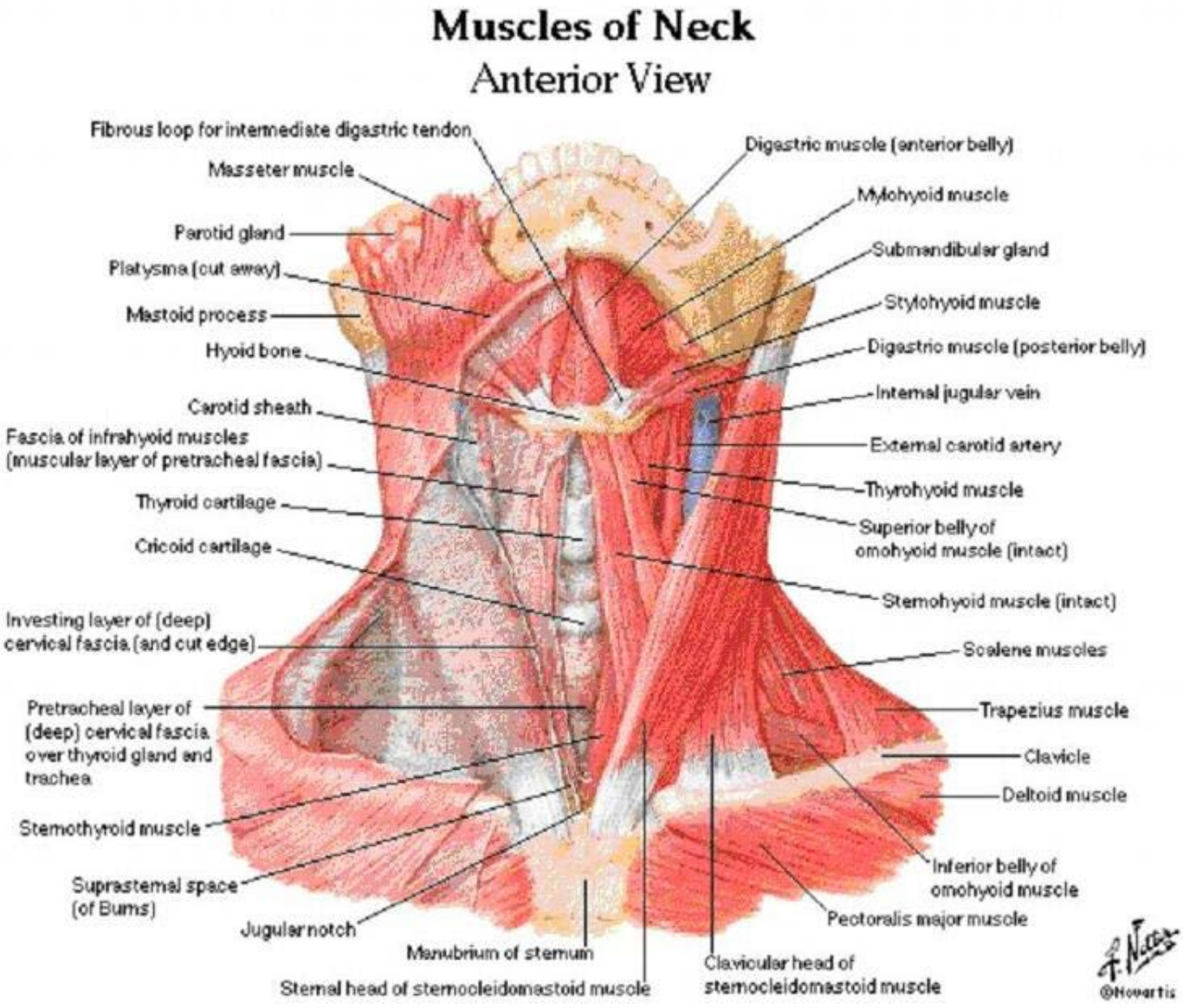
Slow down!
"The quieter the mind
The stiller the hands
The less movement we make
The more we can perceive involuntary movement."
- James Jealous, DO

Don't

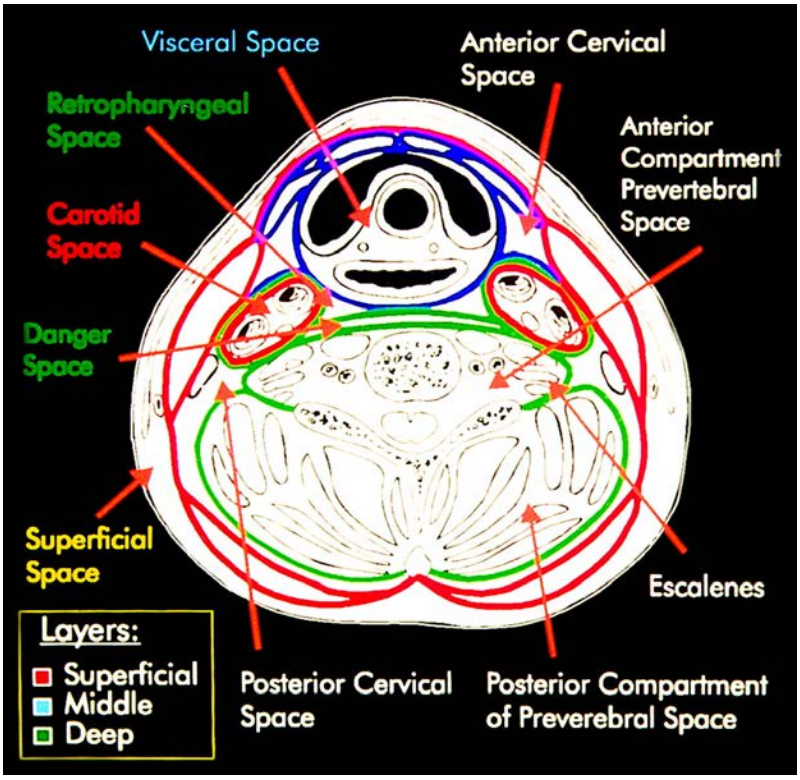
Over-treat your patients with this technique tomorrow.
Risk of harm
Can be too much change for the patient in one session
Work quickly
Rush through the barrier.
Treat on hardware you have never seen before
Get X-rays, CT/MRI reports
Think you will be proficient in this technique immediately!
It takes time and patience and patients! LOTS of patients – 500-1000!

Do you feel overwhelmed?
1st Thing to do!
Incorporate 1-2 techniques/patient/treatment to start.
Don't over-treat – It can be too much for the patient to handle!

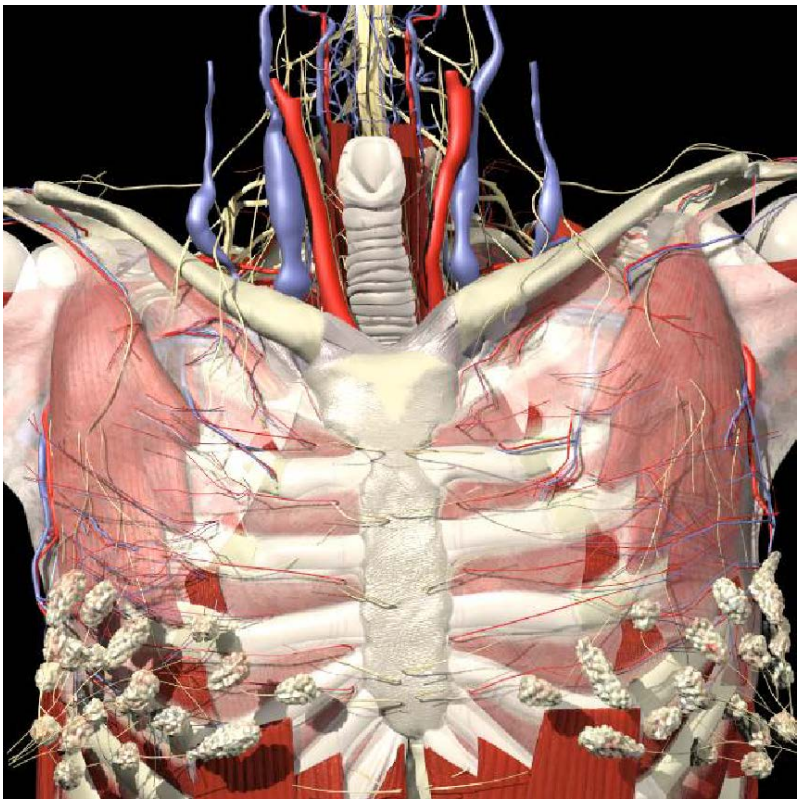
Shoulder Anatomy



Cervical Fascial Layers

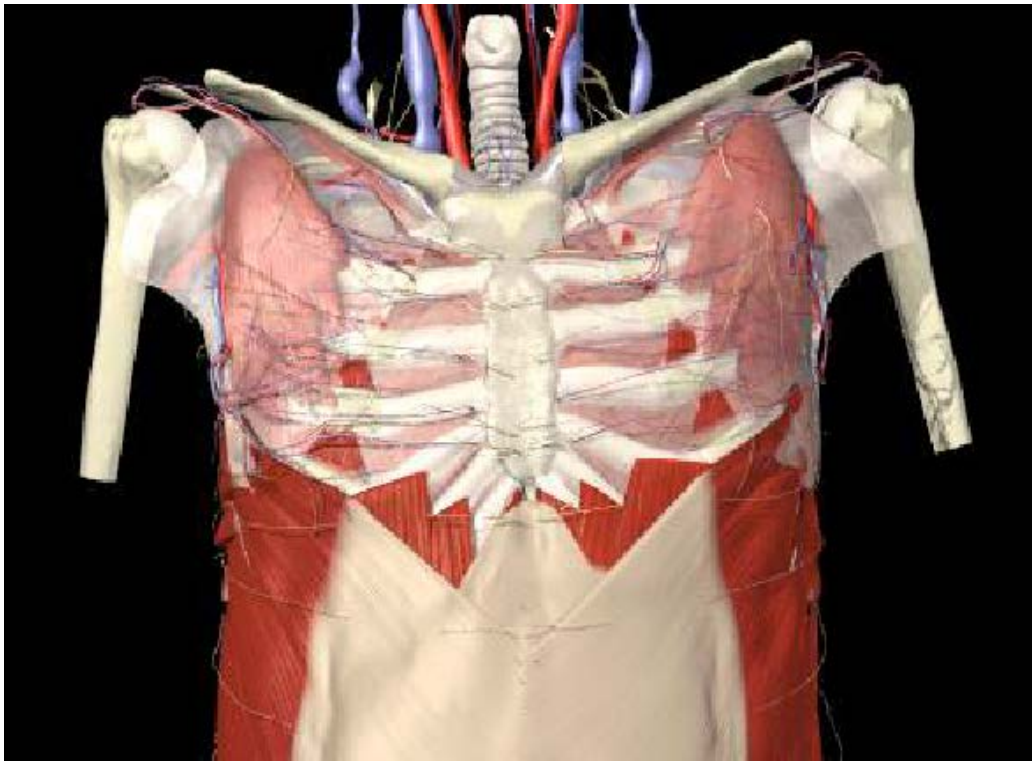


Sternoclavicular Complex



Coracoid Ligaments

Pectoralis Minor

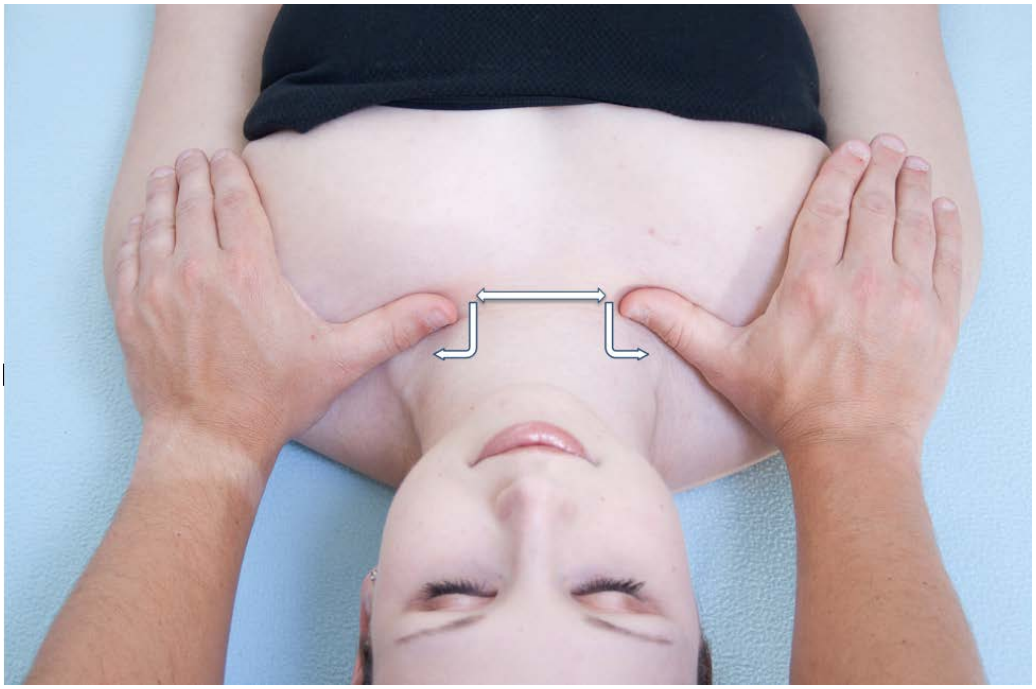


Shoulder Techniques

Anterior Cervical Fascia

Patient position:
Supine on a table

Therapist position:
Seated at head of table



Technique:
Contact both of your thumbs, with their full surface area, flat onto the superior portion of the clavicles bilaterally. Your thumb pads should be at the level of the Sternoclavicular joint. Feel for the reciprocal tension within the cervical fascia. Load your pressure evenly through your thumbs in the combined movements posteriorly (towards the table), inferiorly (towards the patients' feet) and laterally (towards the AC joints.) As you come to areas of increased tension or increased densification, gently match the reciprocal tension at that point and pause there until a softening of tissue occurs. Once the softening occurs, continue the technique until the areas have been cleared of restriction. Reassess for suppleness in the tissues bilaterally.

Costoclavicular Ligament / Upper Mediastinum

Patient position:
Supine on a table

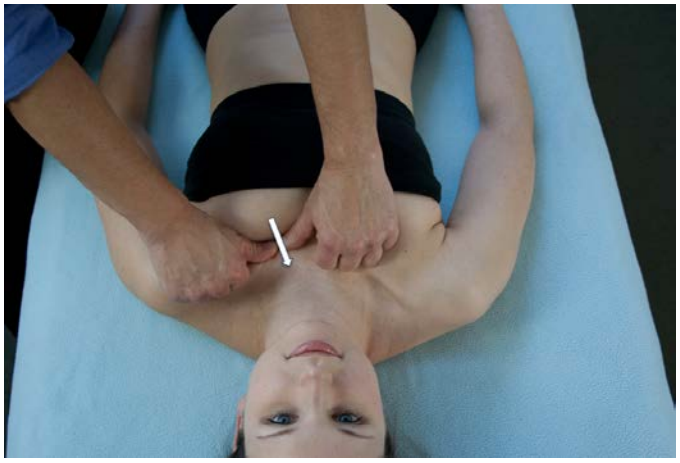
Therapist position:
Standing at the head of the table

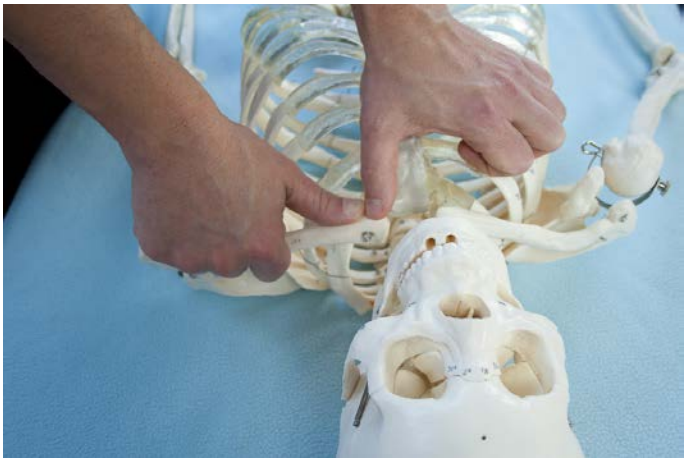
Technique:
The costoclavicular ligament is connected to the upper mediastinum, the endothoracic fascia, sternalis-thoracicus fascia, parietal and visceral pleura. It also has connections to the mediastinum, fibrous pericardium, phrenic nerve and diaphragm. Contact this ligament at the sternal attachment of the 1st rib just posterior and inferior to the clavicle. Matching the reciprocal tension of the tissues with your flat thumbs, load your pressure posteriorly, inferiorly and laterally while your patient exhales. Repeat and gently hold this position until the tissues soften. Once a softening occurs, reassess for suppleness in the tissues.

Anterior Sternoclavicular Ligament

Patient position:
Supine on a table

Therapist position:
Standing beside the patient facing the patient





Technique:
Treatment is for an Anteriorly/Inferiorly positioned clavicle
Assess the movements of the SC joint with inhalation and exhalation. The clavicle should roll and glide superiorly/posteriorly with inhalation, inferiorly/anteriorly with exhalation.
Contact the anterior/inferior aspect of the SC joint and medial 1/3 clavicle with flat thumbs. With the patients' breath, gently match the reciprocal tension of the tissues during inhalation. Hold this position until the tissues soften and the clavicle repositions superiorly and posteriorly to a more neutral position. Once the tissues have released/softened, reassess for suppleness and movement of the tissues with inhalation and exhalation.

Posterior Sternoclavicular Ligament

Patient position:
Supine on a table

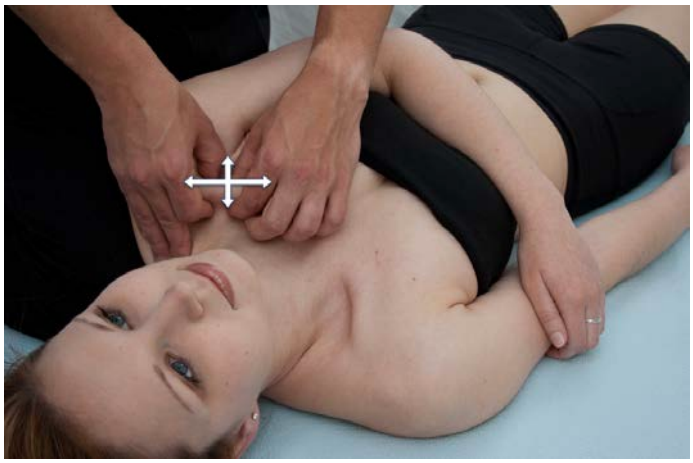
Therapist position:
Seated/Standing at the head of the table

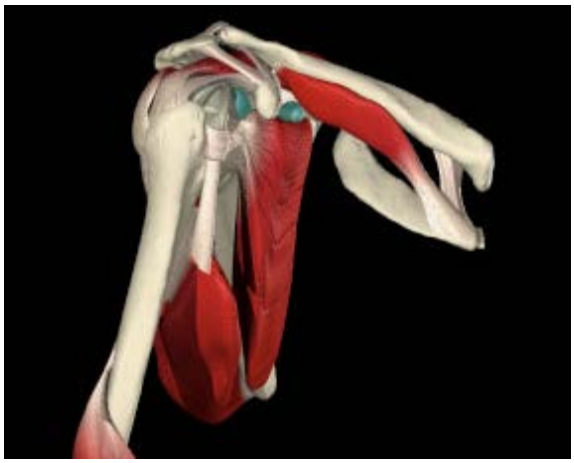
Technique:
Treatment is for a Posterior/Superiorly positioned clavicle
Assess the movements of the SC joint with inhalation and exhalation. The clavicle should role and glide superiorly/posteriorly with inhalation, inferiorly/anteriorly with exhalation.
Contact the superior/posterior aspect of the SC joint and medial 1/3 clavicle with flat thumbs. With the patients' breath, gently match the reciprocal tension of the tissues during exhalation. Hold this position until the tissues soften and the clavicle repositions anterior and inferiorly to a more neutral position. Once the tissues have released/softened, reassess for suppleness and movement of the tissues with inhalation and exhalation.

Subclavious

Patient position:
Supine on a table

Therapist position:
Standing beside the patient facing the patient





Technique:
Place your knee behind the patients' scapula allowing the affected arm to be drawn across the body. Position the patients' head side-flexed and rotated towards you, slackening the anterior fascia and supraclavicular tissues. Gently grasp the subclavius muscle between your thumbs anteriorly and index fingers posteriorly. Matching the reciprocal tension of the tissues, load your thumbs in a posterior and superior direction. Hold this position until the tissues soften. Once a release/ softening has completed, gently spread your thumbs causing a lengthening to the muscle. Reassess for suppleness in the tissues. Once one side is completed, treat the opposite side.

Corocoid Ligaments

Patient position:
Supine on a table

Therapist position:
Standing beside table

Technique:
This technique targets the conoid and trapezoid ligaments. These ligaments have possible ligamentomuscular reflexes with the pectoralis minor, coracobrachialis and short head biceps muscles. Locate these ligaments in the small space located inferior to the lateral end of the clavicle and superior to the coracoid process. Matching the reciprocal tension of the tissues, load posteriorly, and inferiorly. Hold this position until the tissues soften. Incorporate AMP's by having the patient gently engaging their pectoralis minor muscle 1-2%. This allows a lengthening of the tissues by increasing the space between the clavicle and coracoid process. Once a softening occurs, reassess for suppleness in the tissues.

Pectoralis Minor / Coracobrachialis / Short Head Biceps

Patient position:
Supine on a table

Therapist position:
Standing at the head table

Technique:
Caution – If the shoulder has been previously dislocated, position the arm on the table for support

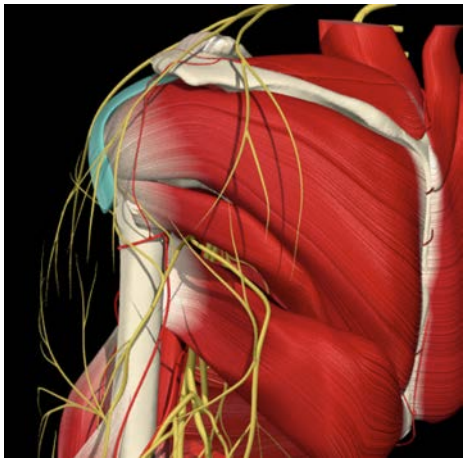
This technique is similar for all of these tissues; the only differences are in the direction of force and hand placement.
Pectoralis minor muscle: Locate the attachment at the coracoid process. Matching the reciprocal tension of the tissues, maintain steady, balanced pressure in the direction of its attachments onto ribs 3-5, until you feel a release of the tension.

Coracobrachialis muscle/short head of the biceps: Place your thumbs just lateral and inferior to the coracoid process applying the same steady, balanced pressure in a lateral and posterior direction. Matching the reciprocal tension of the tissues, maintain steady, balanced pressure until you feel a release of the tension.

Teres Major / Minor

Patient position:
Prone on a table

Therapist position:
Standing at head of table facing the patients feet

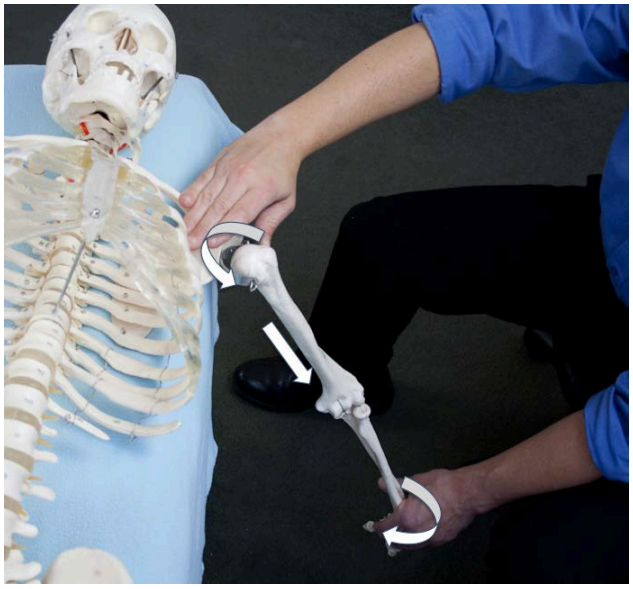


Technique:
With your patient in the prone position, slightly abduct their affected arm. Contact the tissues by placing your fingers into their axilla. Placing your other hand flat against their scapula, place both of your thumbs together locating the point of most tension in the tissues. Follow the direction of permitted motion with both hands carrying the tissues in all directions needed to release the tension.

Long Head Biceps/Glenohumeral Capsule

Patient position:
Supine on a table with affected shoulder off the table

Therapist position:
Standing beside the patient facing the patient



Technique:

Please Note: If your patient has a history of anterior/inferior GH Joint dislocation and feels unsafe having their arm resting off the table unsupported, this technique may be inappropriate and recommended not to use.

This technique targets the longhead of the biceps and its synovial sheath as it travels inside the glenohumeral joint capsule attaching onto the supraglenoid tubercle of the scapula. It also targets the tissues of the glenohumeral capsule, glenoid labrum and superior glenohumeral ligamentous tissue.

The normal range of motion of the glenohumeral capsule into extension is 45-60 degrees. Depending on the severity/chronicity of injury, these ranges may not be able to attain in one treatment, therefore gaining this range should be structured over a period of treatments.
Position your patient close to the edge of the table with their shoulder to be treated gently/comfortably resting off the table.

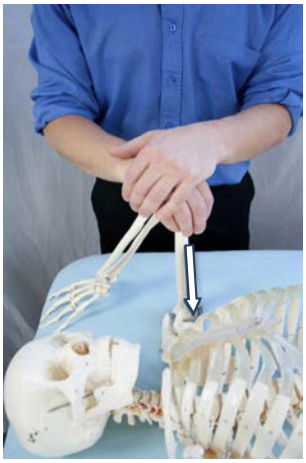
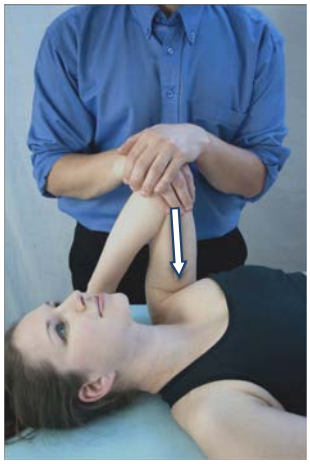
With your hand closest to the end of the table, gently rest it onto the anterior shoulder. This provides awareness and comfort for the patient. It also allows the therapist to monitor humeral movement and tissue response.
With your other hand, gently contact the distal radius and ulna. Slowly and gently fully extend the elbow and fully pronate the wrist. Next slowly start to bring the whole arm into further extension. As the patients' discomfort starts to increase, stop and hold for 3-5 seconds. Then back off the angle of treatment by 10% and start the process once again bringing the whole arm into further extension gaining an increased range of motion. Once again as the patients' discomfort starts to increase, stop and hold for 3-5 seconds, back off the angle of treatment by 10% and start the process once again.

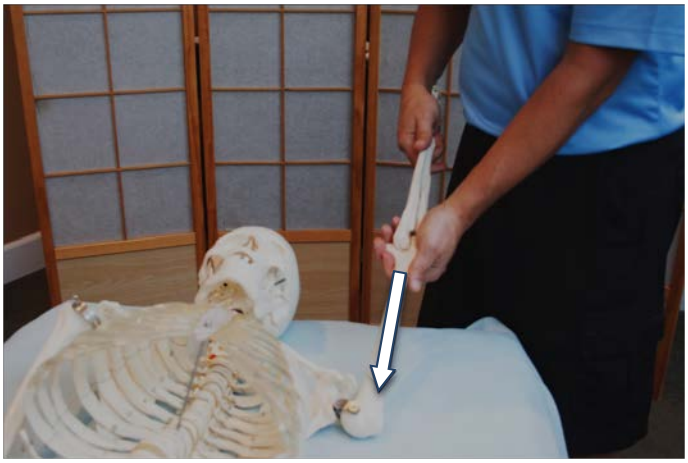
Advanced Technique
Once you are able to gain full range of motion of the glenohumeral joint, holding the whole arm at the complete end range of motion, gently with both hands, grasp the medial and lateral condyles of the humerus. Gently compress the humerus up to the ceiling challenging the anterior tissues of the shoulder. Hold for 3-5 seconds. Next gently distract the humerus towards the floor. Hold for 3-5 second. Repeat both 3-5 times. End by slowly removing tension to all tissues and assist your patient with repositioning their arm back onto the table next to them.

General GH Capsule

Patient position:
Supine on a table

Therapist position:
Standing at the head of the table, next to the patient on the same side to be treated



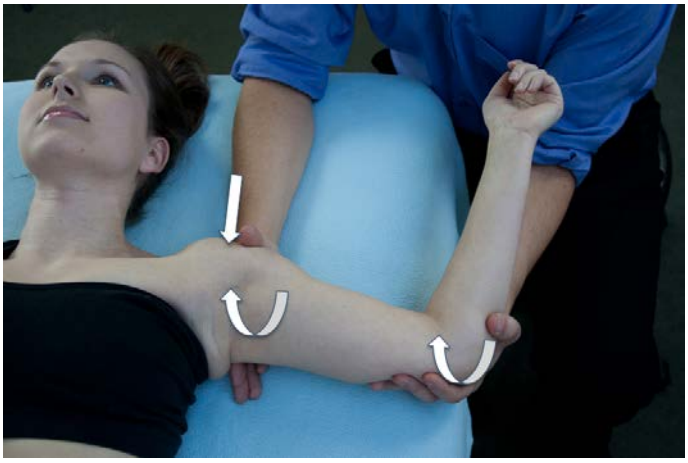

Technique:
Please Note: If your patient has a history of anterior/inferior GH Joint dislocation and feels unsafe, this technique may be inappropriate and recommended not to use.
If your patient has a sensitized Adhesive Capsulitis, gaining an increase in range of motion may occur over a number of treatments.

The overall intent with this technique is to increase GH tissue elasticity and range of motion in full flexion, full abduction and full external rotation. This is the direction we always will be working towards acquiring.
Standing at the edge of the table on the same side as the arm to be treated gently contact the distal end of the humerus and take the GH joint into a range of motion that is comfortable for the patient. Compress through the humerus into the GH joint capsule for 3-5 seconds. Release your compressive pressure, reposition the humerus into another random range of motion and repeat. Remember to always be working to acquiring full flexion, full abduction and full external rotation.
End by slowly removing tension to all tissues and assist your patient with repositioning their arm back onto the table next to them.

GH Capsule Disengagement

Patient position:
Supine on a table

Therapist position:
Seated at the head of the table, next to the patient on the same side to be treated



Technique:
WARNING RISK OF HARM: Do not attempt this technique with a patient suffering from a previous GH Dislocation(s)!

This technique challenges the tissues that connect the inferior aspect of the AC joint to the superior aspect of the GH joint. It encourages the head of the humerus anteriorly and inferiorly, challenging the GH joint capsule along with its attachments to the GH Fossa, Labrum and AC joint.

Release the Teres muscles before performing this technique.
Place the thenar web of one hand under the posterior GH joint to encourage the GH capsule anteriorly and inferiorly.
With your other hand, gently contact the patients flexed elbow. The intent is to slowly drawing the arm into a position of abduction and external rotation. With both hands working together as one unit, compress both hands towards each other through the humerus, adjusting the direction of forces. Feel the maximum reciprocal tension in the tissues between your two hands. Maintain steady, balanced pressure until you feel a release of the tension occur.

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About Robert

Robert has been a (Canadian 3000hr) Registered Massage Therapist (RMT) for over 30yrs and an educator for over 25yrs.

Robert has spent his career researching, learning, developing and updating Ligamentous Articular Strain Technique. Initially studying the works of A. T. Still, DO, Robert continued to study and be influenced by W. G. Sutherland, DO; H. A. Lippincott, DO; R. Lippincott, DO; R. Becker, DO; A. Wales, DO and the Dallas Osteopathic Study Group.

As science and medicine advanced, Robert recognized that some of the original perceptions, narrative and principles may seem out of touch with today's knowledge, while others maintain the test of time. Robert has sought to update the narrative of the technique and its outcomes by incorporating the most current research and understanding of neuropsychophysiological, social factors, pain science, fascial research and ligamentous pain referral patterns.

This text represents a reconceptualization, a revitalization of a classical Osteopathic Manual Technique.
Robert believes therapists and clinicians have a great opportunity to improve the quality of life of their patients. He has always felt that our understanding of the ligamentous articular system has been insufficient.

Robert's desire is to bring greater awareness of this system's role in neuromusculoskeletal injuries and disorders, and to provide information that will enhance the therapists and clinicians' capacity to help their patients.

Robert maintains a full-time practice while he continues researching, developing, training and educating.

Robert can be contacted at:
lastechnique@gmail.com
or
www.lastsite.ca

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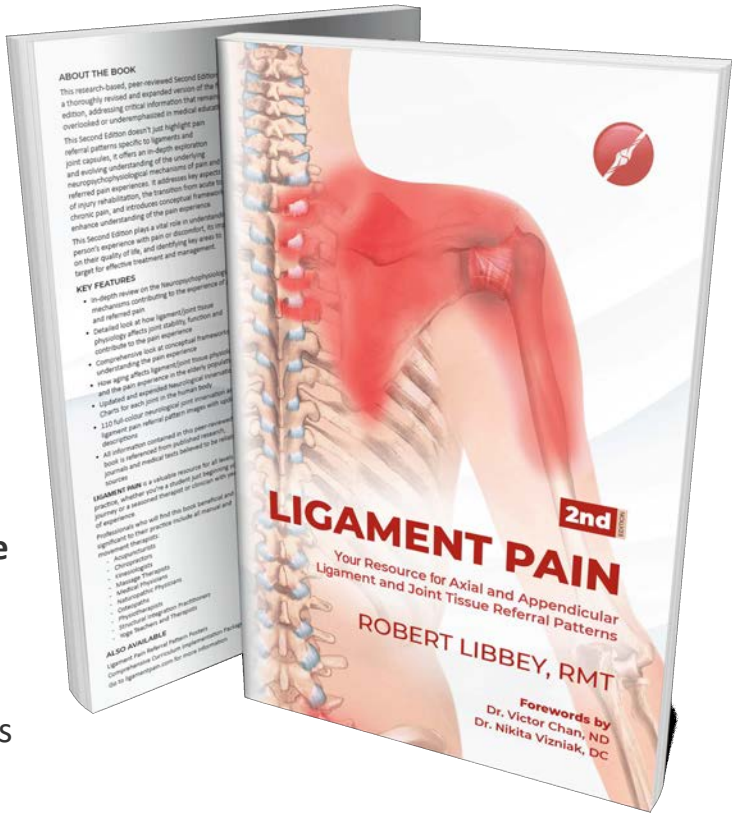

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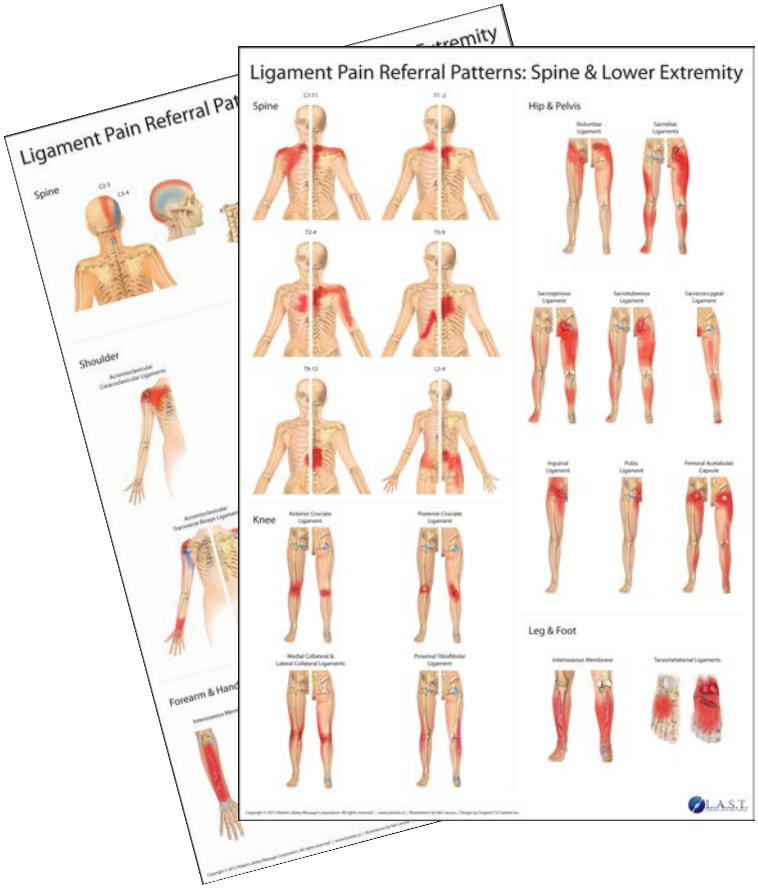
Over the last 25yrs I've recognized a distinct, immediate and ongoing problem. My patients were complaining of pain referral patterns that didn't seem to match up with the standard trigger points, dermatome or sclerotome patterns.



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