Integrating Osteopathic Manipulation, Applied Kinesiology Muscle Testing and Acupressure Massage:

A Manual Approach for Treating Pain and Dysfunction without Drugs and Surgery

Part Two of a Four Part Series

Royal Canadian College of Massage Therapy

1446 Don Mills Rd, North York ON

Saturday, November 7, 9:00 AM-5:30 PM
Sunday, November 8, 9:00 AM – 4:30 PM





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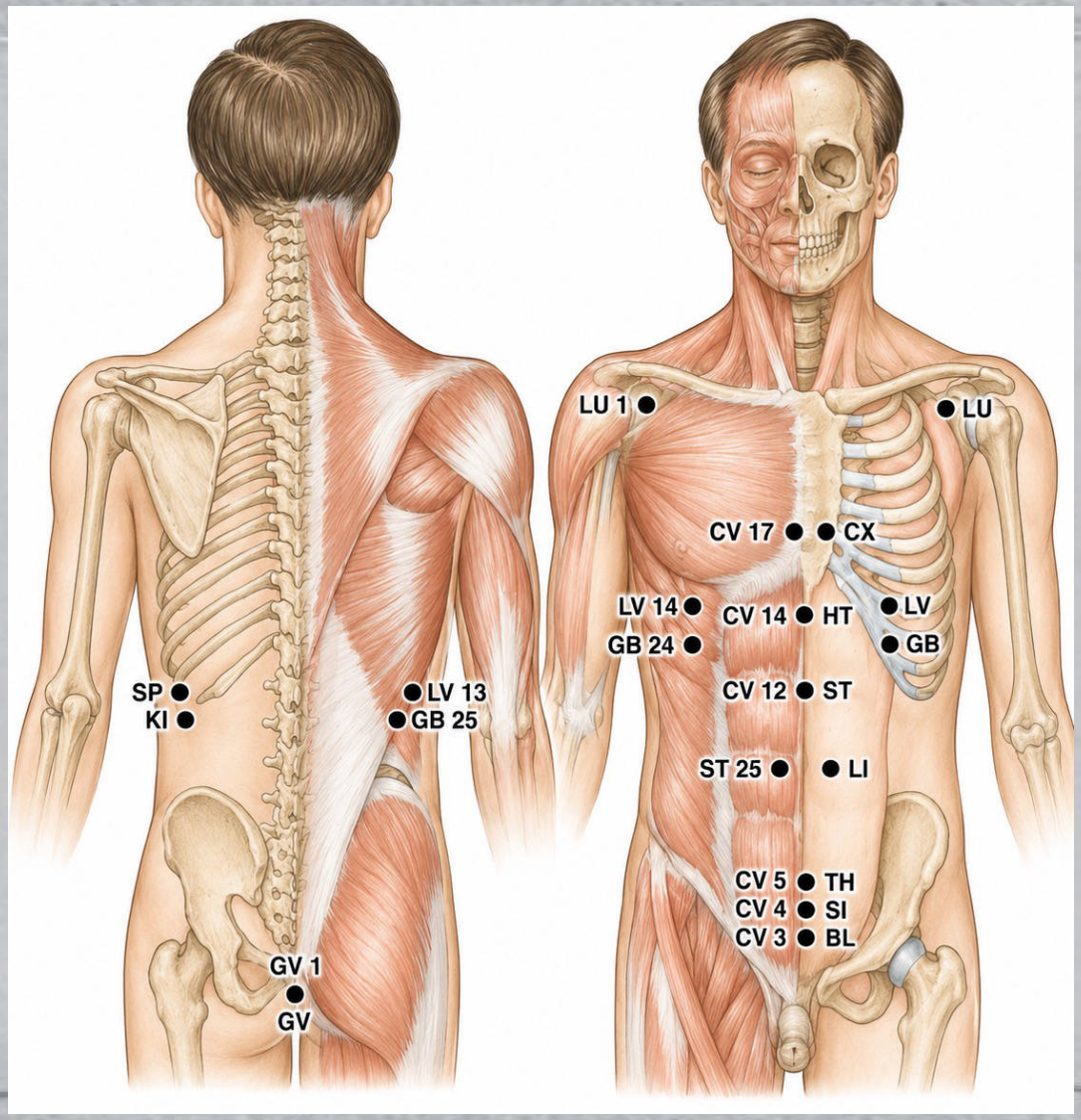
THE NEW YORKER

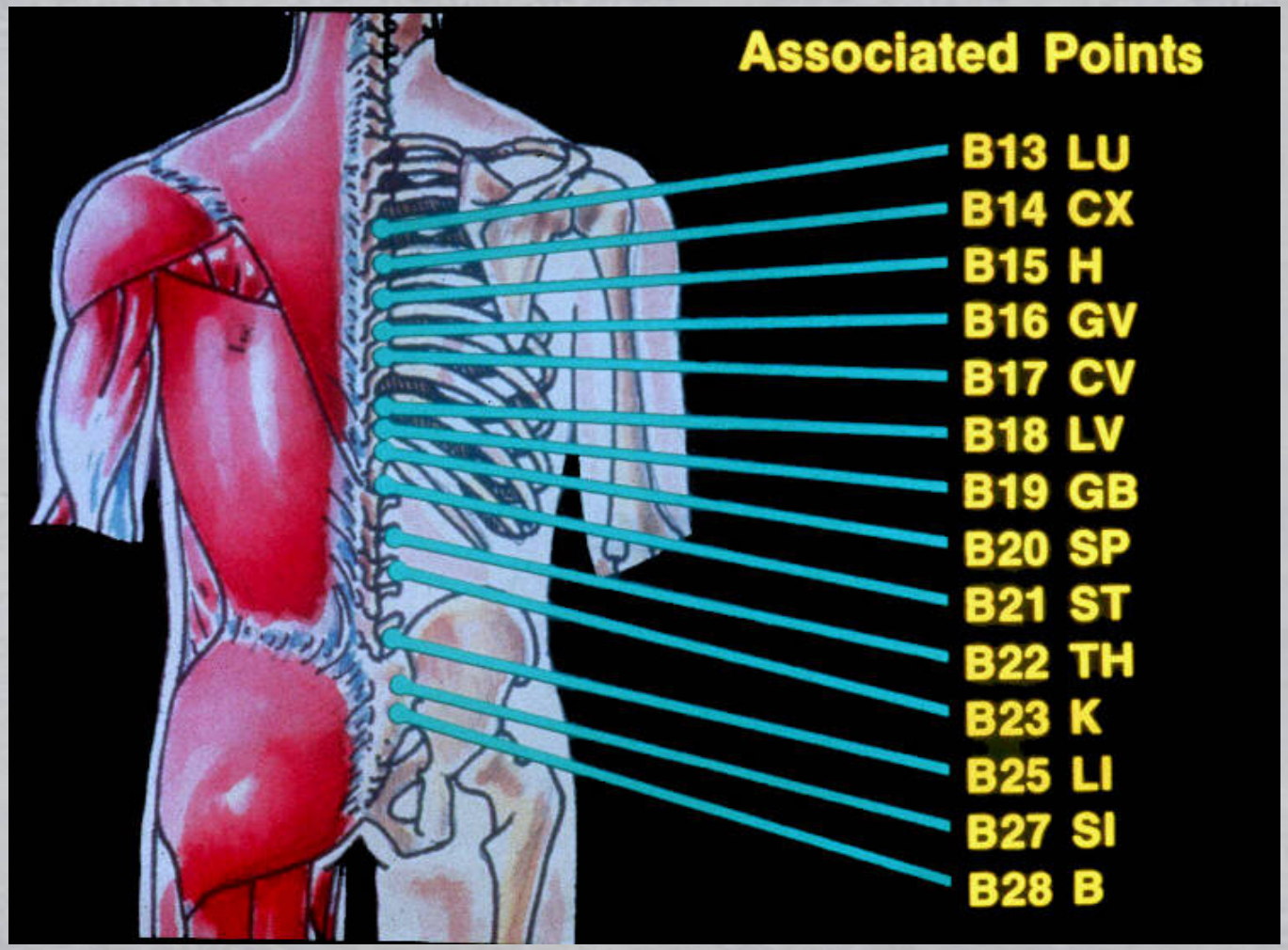


"Hold on—your boarding pass says 'possum,' but your passport says 'opossum.'"

Learning Objectives

- At the end of this workshop, attendees will be able to: Identify meridian imbalances using MU points combined with manual muscle testing.
- Identify meridian imbalances using radial artery pulse points with manual muscle testing.
- Evaluate for the presence of segmental level somatic dysfunctions that are present at the precise location of back SHU points and learn fast effective treatments for resolving those dysfunctions.
- Distinguish specific major muscle groups that are correlated with specific acupuncture meridians (e.g. PSOAS muscle relationship to the kidney meridian)
- Apply a muscle dance sequence that follows the 24-hour clock RONG cycle demonstrating the kinesiology movements of each of those muscles and the corresponding manual muscle test for that muscle group.
- Apply osteopathic manipulation techniques for releasing specific acupuncture points and their associated channels.


SP
KI
LV 13
GB 25
GV 1
GV
LU 1
LU
CV 17
CX
LV 14
CV 14
HT
LV
GB 24
GB
CV 12
ST
ST 25
LI
CV 5
TH
CV 4
SI
CV 3
BL


Associated Points
B13 LU
B14 CX
B15 H
B16 GV
B17 CV
B18 LV
B19 GB
B20 SP
B21 ST
B22 TH
B23 K
B25 LI
B27 SI
B28 B

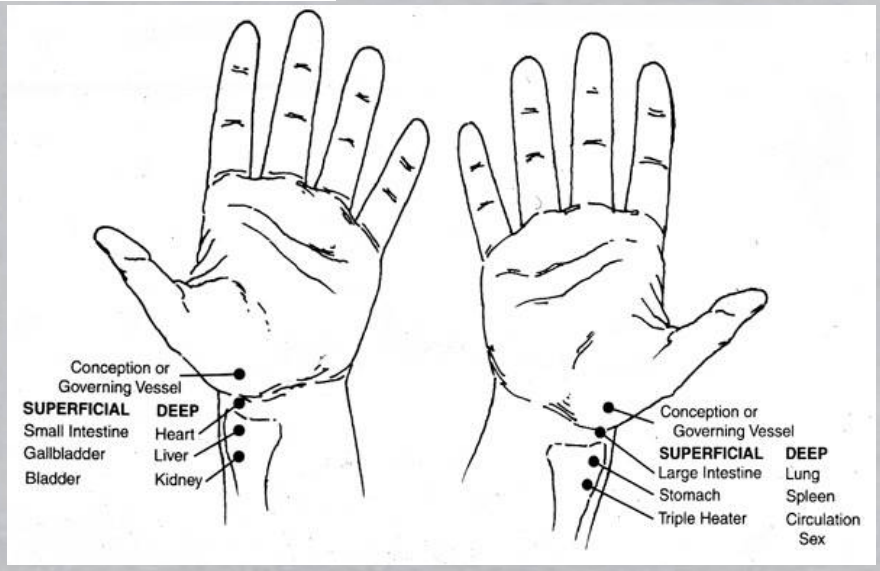
APPLIED KINESIOLOGY & MERIDIAN DIAGNOSTICS

Screening Pulse Points for Meridian Disturbances

A Step-by-Step Clinical Procedure & Pulse Point Mapping Protocol

Pulse Position & Organ Mapping

Wrist Side	Position	Superficial	Deep
Left Wrist	Distal (Point 1)	Small Intestine	Heart
	Middle (Point 2)	Gallbladder	Liver (Wood)
	Proximal (Point 3)	Bladder	Kidney
Right Wrist	Distal (Point 1)	Large Intestine	Lung
	Middle (Point 2)	Stomach	Spleen
	Proximal (Point 3)	Triple Heater	Circulation Sex



Muscle Testing Applications for Acupuncturists

Screening Pulse Points for Meridian Disturbances:

1. Find a strong intact leg muscle (e.g. Abductor)
2. Have patient touch all 3 radial pulse points on left wrist
    - If the leg muscle weakens, have the patient touch each individual pulse to see which one weakens the muscle test
3. Repeat this same procedure with 3 radial pulse points on right wrist

Example:

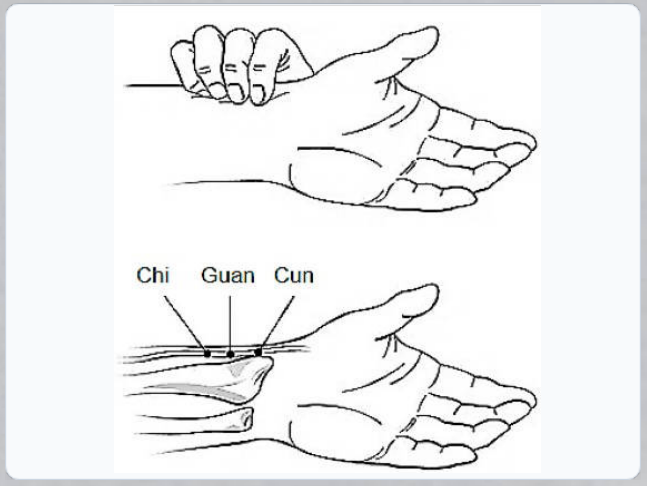
Patient tests strong on Gluteus Medius. Patient touches all 3 left wrist points with index, middle, and ring finger of right hand. A weakening occurs. Then touching only the middle (wood) pulse produces the same weakening. This identifies that the meridian needing treatment is either Liver or Gallbladder.

* When testing patient have them not breathe in or out for 5 seconds before or during the actual muscle test as they touch their pulse points.

Screening Procedure & Rules

- **1. Baseline Muscle Test:** Find a strong, intact indicator muscle (e.g., Leg Abductor or Gluteus Medius).
- **2. Left Wrist Screening:** Have patient touch all 3 radial pulse points on left wrist simultaneously. If weakening occurs, test each point individually to isolate the specific disturbance.
- **3. Right Wrist Screening:** Repeat the exact same procedure with the 3 radial pulse points on the right wrist.
- **Critical Breath-Hold Rule:**
  When testing, instruct the patient **not to breathe in or out for 5 seconds** immediately before and during the actual muscle test as they touch their pulse points.



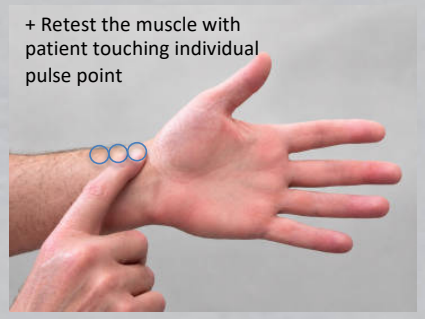


Source: pmc.ncbi.nlm.nih.gov

Clinical Application Example







1. Baseline Setup

Patient is positioned and tests **Strong** on the baseline muscle (e.g., Gluteus Medius).

Ensures indicator muscle is intact before introducing pulse contact.

2. All-Points Touch

Patient touches all 3 left wrist points simultaneously using index, middle, and ring finger of right hand.

Result: Muscle Weakening Occurs!

3. Pulse Isolation

Patient touches each point individually. Touching **ONLY the middle (wood) pulse** reproduces muscle weakness.

Conclusion: Meridian needing treatment is Liver or Gallbladder.

Clinical Key: Isolating the single pulse point that induces muscle weakness allows immediate identification of the specific organ meridian system requiring therapeutic balancing.

APPLIED KINESIOLOGY & MERIDIAN DIAGNOSTICS

MU Point & Associated Point Diagnosis

Clinical Protocols for Muscle Testing, Meridian Reflex Localization, and Energy Balancing

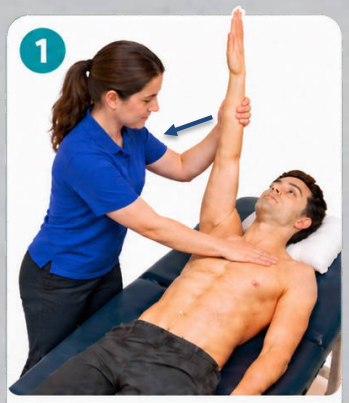
Using MU (Alarm) Points with Muscle Testing

If a muscle tests weak have patient touch the MU point that corresponds to that muscle

Example:
Pectoralis Major Clavicular tests weak. It is correlated with the Stomach meridian. Have patient touch CV-12 (Stomach MU). If muscle tests strong while patient touches CV-12 it indicates Stomach meridian is involved. Then find points on Stomach meridian that strengthen the muscle. (e.g. ST-41 which is the tonification point for the Stomach meridian).

* Sometimes if a strong muscle goes weak as patient touches a MU point, it indicates over-energy in that meridian. But it can also sometimes indicate that the meridian is not in a state of balance.

Clinical Step-by-Step Example



1 Initial Weakness

Pectoralis Major Clavicular muscle tests weak during baseline muscle evaluation. Identify that PMC muscle correlates directly with the **Stomach Meridian**.



2 Therapy Localization

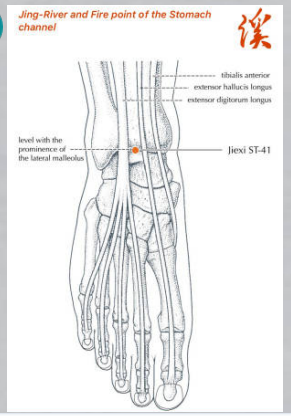
Patient touches **CV-12** (Stomach MU Point). If muscle strengthens, Stomach meridian involvement is confirmed.





3 Test Strong Muscle

Test the Gluteus Medius (Sometimes if a strong muscle goes weak as patient touches a MU point, it indicates over-energy/ imbalance in that meridian.



4 Therapeutic Correction

Find strengthening points on Stomach meridian, such as **ST-41** (Tonification Point).

Clinical Insight: The MU point acts as an indicator switch. When therapy localization to CV-12 changes a weak muscle test to strong, it connects the underlying weakness energetically to the Stomach meridian. When a strong muscle weakens while patient is touching CV-12, it indicates a disturbance of the Stomach meridian. This could be an excess or deficiency of that meridian.

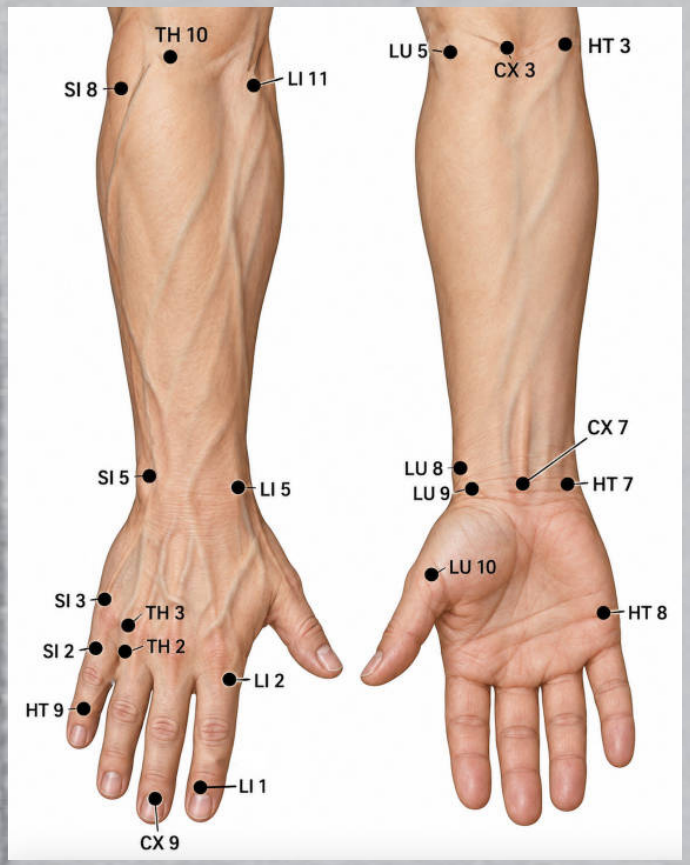
Muscle/Meridian Association

LUNG	Deltoids (middle, posterior, and anterior), serratus anticus, levator scapula, and coracobrachialis. Provisional for flexor pollicis longus and brevis
LARGE INTESTINE	Hamstrings, tensor fascia lata, and quadratus lumborum
STOMACH	Pectoralis major (clavicular division), biceps brachii, brachialis, brachioradialis, supinator, pronator teres, pronator quadratus, opponens pollicis, adductor pollicis, opponens digiti minimi, sternocleidomastoid, neck extensors, and medial neck flexors
SPLEEN	Lower trapezius, middle trapezius, latissimus dorsi, triceps brachii, and anconeus
HEART	Subscapularis
SMALL INTESTINE	Quadriceps, abdominals, flexor digiti minimi brevis
BLADDER	Tibialis anterior, peroneus tertius, peroneus longus and brevis, extensor hallucis longus and brevis, and sacrospinalis
KIDNEY	Psoas, iliacus, and upper trapzeius
CIRCULATION SEX	Sartorius, gracilis, adductors, gluteus maximus, gluteus medius and minimus, piriformis, gastrocnemius, soleus, tibialis posterior, flexor hallucis brevis, and flexor hallucis longus
TRIPLE HEATER	Infraspinatus, teres minor, occasionally sartorius and gracilis
GALLBLADDER	Popliteus
LIVER	Pectoralis major (sternal division), rhomboids
CONCEPTION VESSEL	Supraspinatus
GOVERNING VESSEL	Teres major

As more experience has been gained in applied kinesiology work with the meridian system, some of the muscle/meridian associations have changed. The changes and provisional associations are primarily for muscles that are not usually treated with meridian therapy.

7—4.

Tonification and Sedation Points

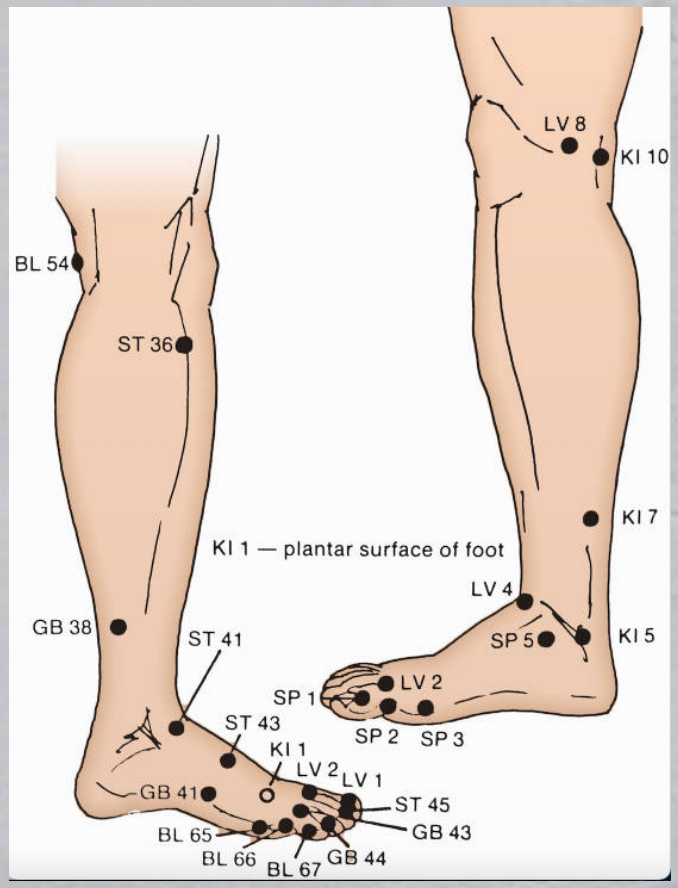


TONIFICATION

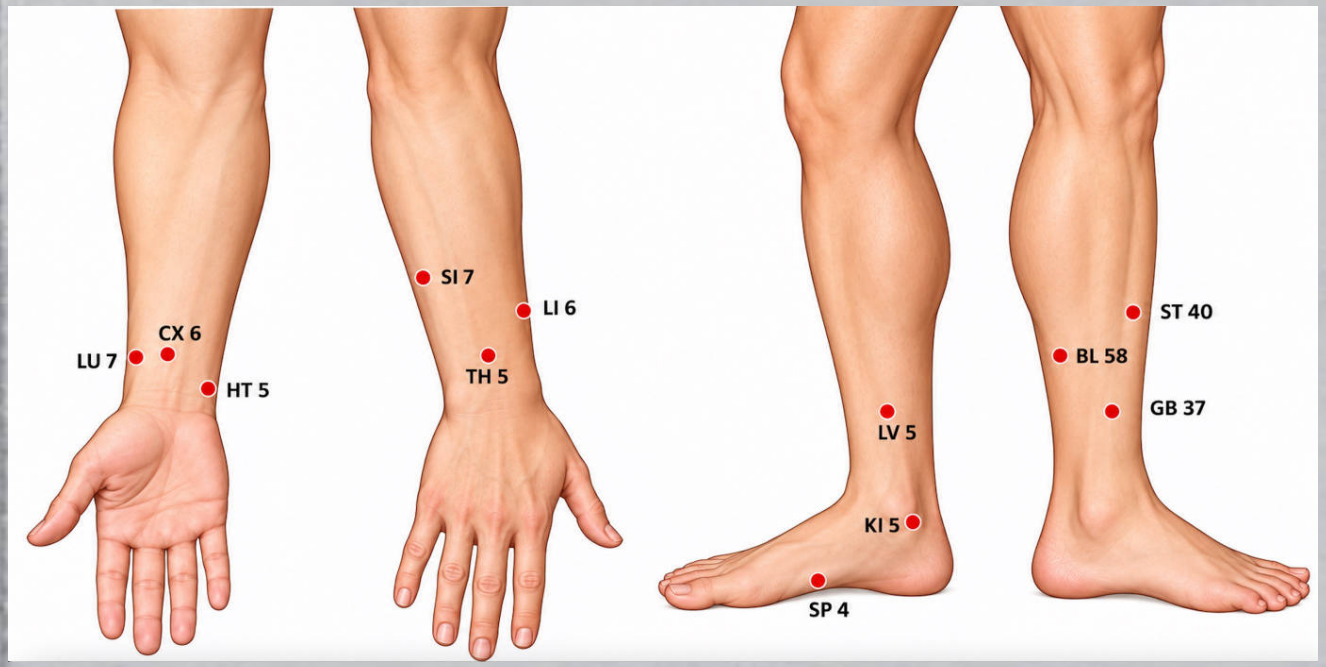
	First		Second	
LU	LU 9	SP 3	LU 10	HT 8
LI	LI 11	ST 36	LI 5	SI 5
ST	ST 41	SI 5	ST 43	GB 41
SP	SP 2	HT 8	SP 1	LV 1
HT	HT 9	LV 1	HT 3	KI 10
SI	SI 3	GB 41	SI 2	BL 66
BL	BL 67	LI 1	BL 54	ST 36
KI	KI 7	LU 8	KI 5	SP 3
CX	CX 9	LV 1	CX 3	KI 10
TH	TH 3	GB 41	TH 2	BL 66
GB	GB 43	BL 66	GB 44	LI 1
LV	LV 8	KI 10	LV 4	LU 8

SEDATION

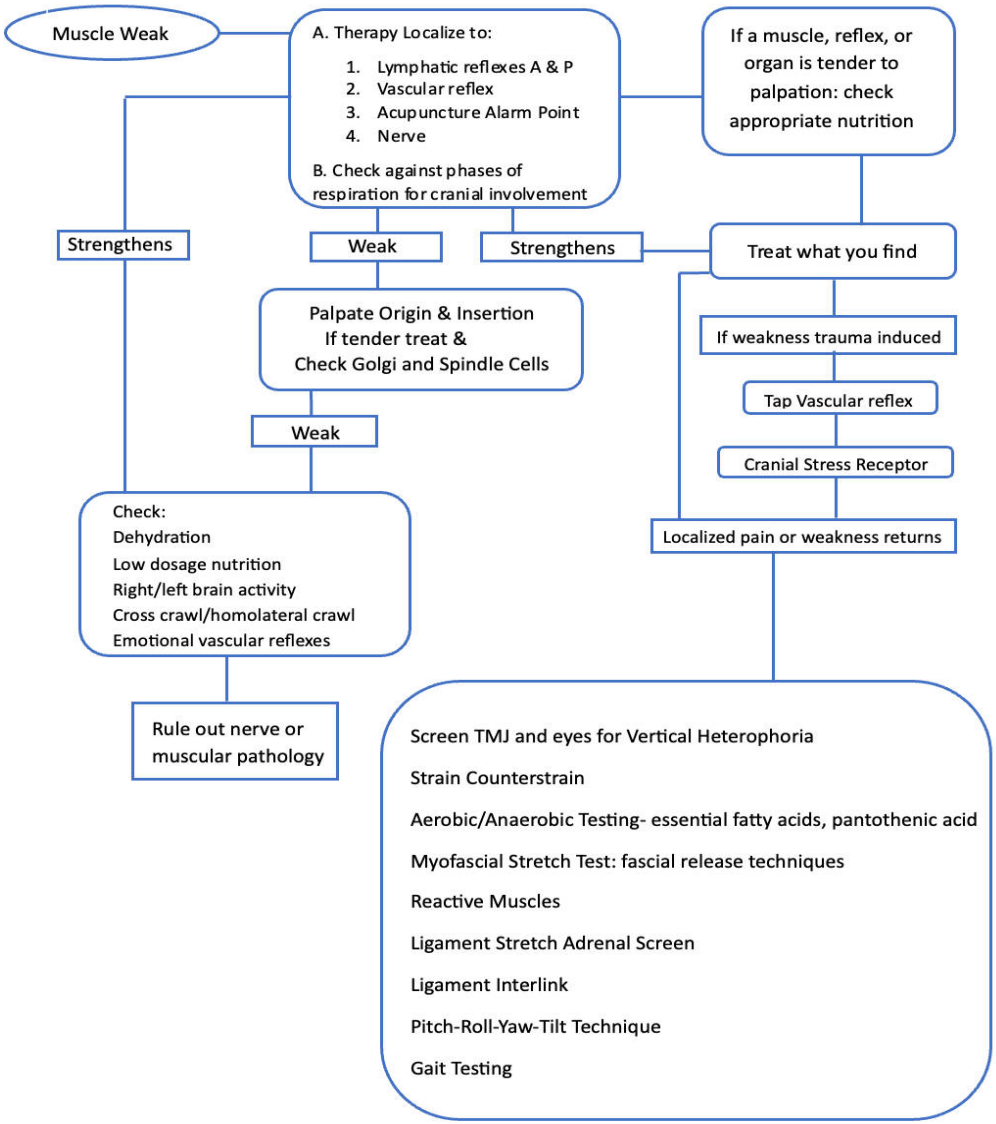
	First		Second	
LU	LU 5	KI 10	LU 10	HT 8
LI	LI 2	BL 66	LI 5	SI 5
ST	ST 45	LI 1	ST 43	GB 41
SP	SP 5	LU 8	SP 1	LV 1
HT	HT 7	SP 3	HT 3	KI 10
SI	SI 8	ST 36	SI 2	BL 66
BL	BL 65	GB 41	BL 54	ST 36
KI	KI 1	LV 1	KI 5	SP 3
CX	CX 7	SP 3	CX 3	KI 10
TH	TH 10	ST 36	TH 2	BL 66
GB	GB 38	SI 5	GB 44	LI 1
LV	LV 2	HT 8	LV 4	LU 8



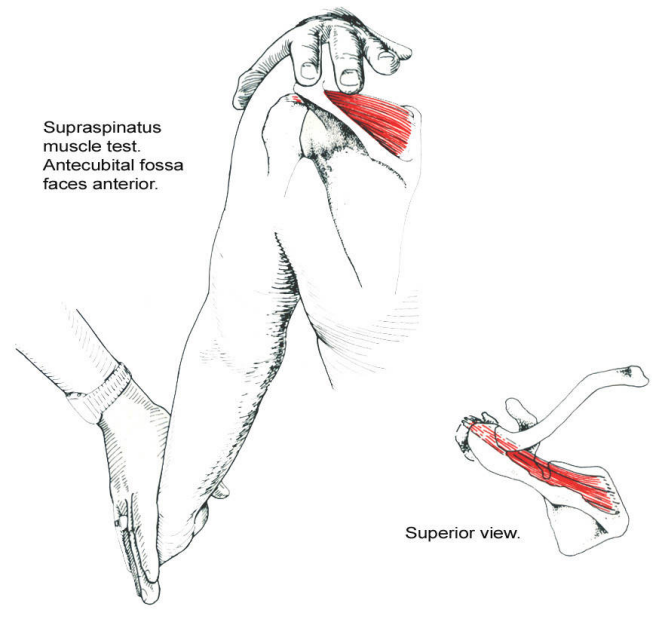
Luo Points

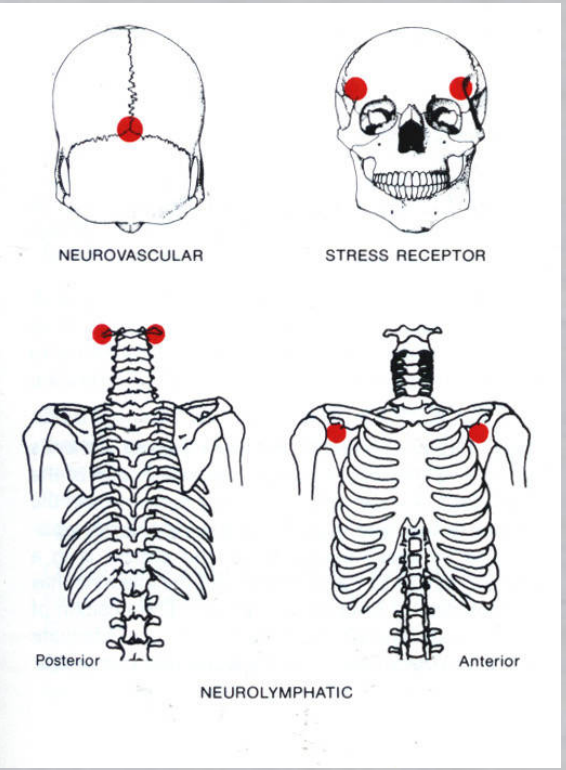


LI 6	LUNG / LARGE INTESTINE	ST 40
SP 4	STOMACH / SPLEEN	HT 5
SI 7	HEART / SMALL INTESTINE	BL 58
KI 5	BLADDER / KIDNEY	CX 6
TH 5	CIRCULATION SEX / TRIPLE HEATER	GB 37
LV 5	GALL BLADDER / LIVER	LU 7
	LUNG	

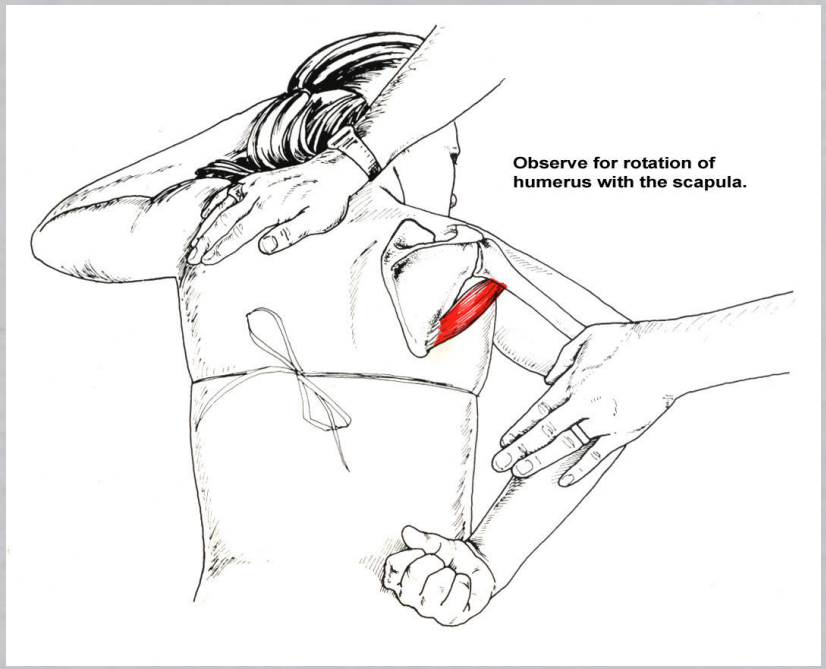

Muscle Weak
A. Therapy Localize to:
1. Lymphatic reflexes A & P
2. Vascular reflex
3. Acupuncture Alarm Point
4. Nerve
B. Check against phases of respiration for cranial involvement
If a muscle, reflex, or organ is tender to palpation: check appropriate nutrition
Strengthens
Weak
Strengthens
Treat what you find
Palpate Origin & Insertion
If tender treat &
Check Golgi and Spindle Cells
If weakness trauma induced
Tap Vascular reflex
Cranial Stress Receptor
Weak
Check:
Dehydration
Low dosage nutrition
Right/left brain activity
Cross crawl/homolateral crawl
Emotional vascular reflexes
Localized pain or weakness returns
Rule out nerve or muscular pathology
Screen TMJ and eyes for Vertical Heterophoria
Strain Counterstrain
Aerobic/Anaerobic Testing- essential fatty acids, pantothenic acid
Myofascial Stretch Test: fascial release techniques
Reactive Muscles
Ligament Stretch Adrenal Screen
Ligament Interlink
Pitch-Roll-Yaw-Tilt Technique
Gait Testing

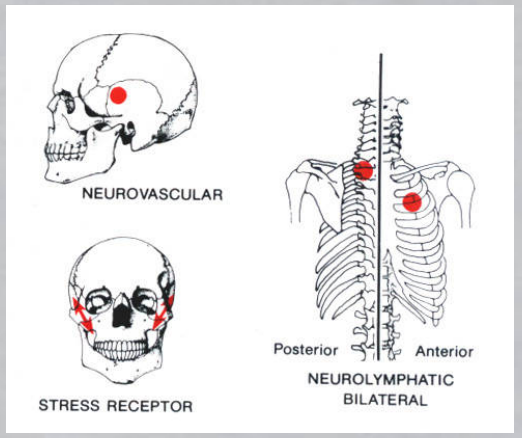
Supraspinatus



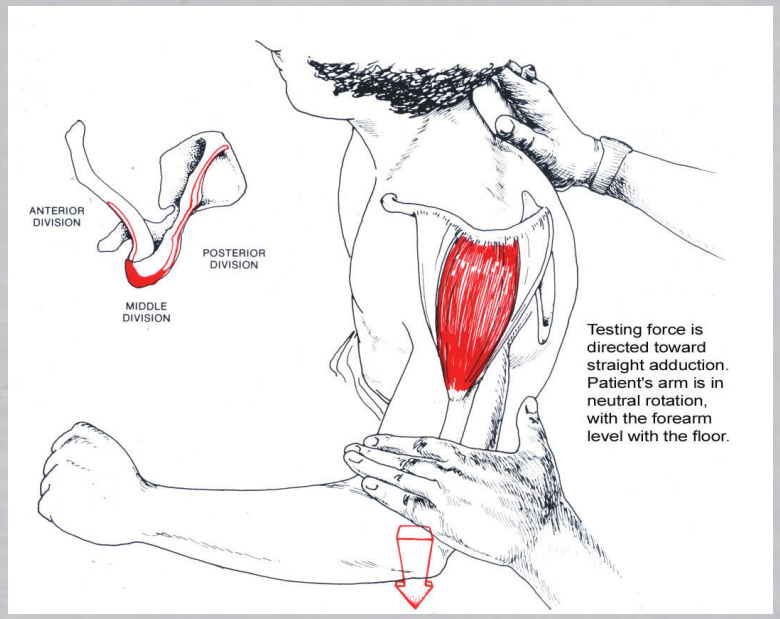


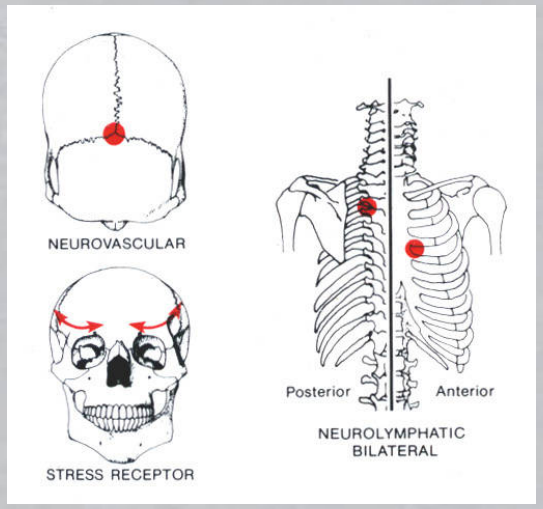
Teres Major


Observe for rotation of
humerus with the scapula.

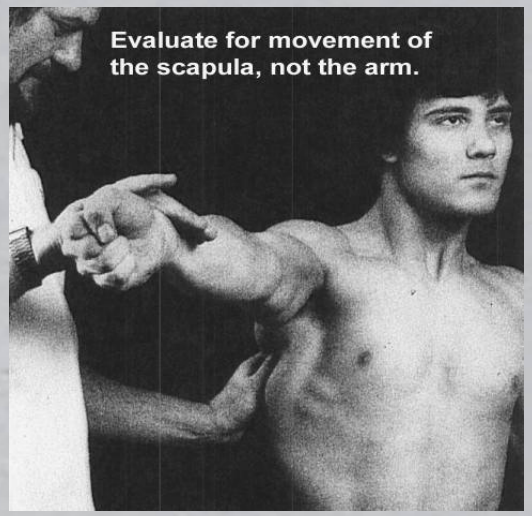

NEUROVASCULAR
STRESS RECEPTOR
Posterior
Anterior
NEUROLYMPHATIC
BILATERAL

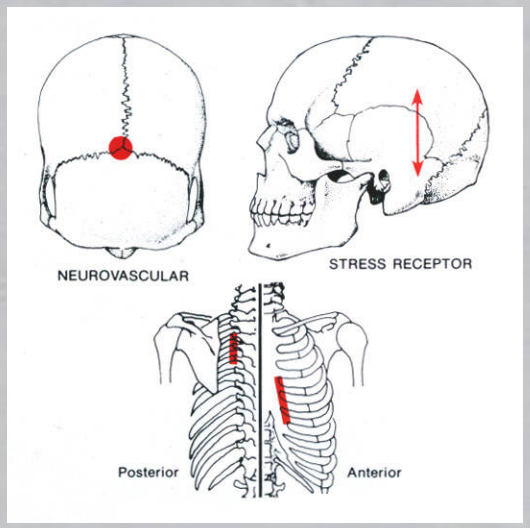
Deltoid - Middle

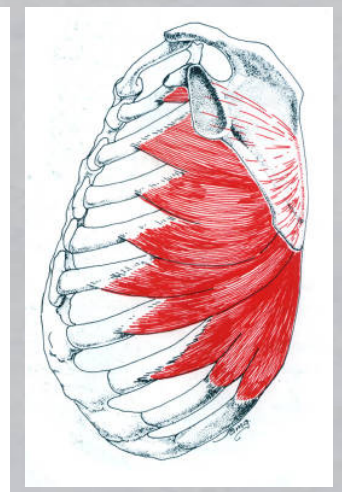




Serratus Anticus

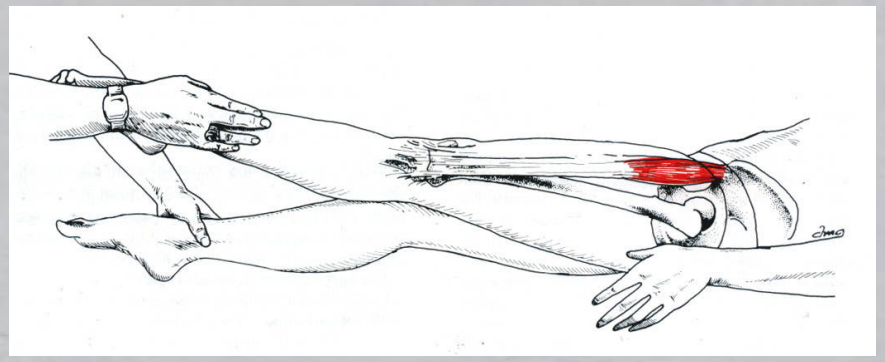


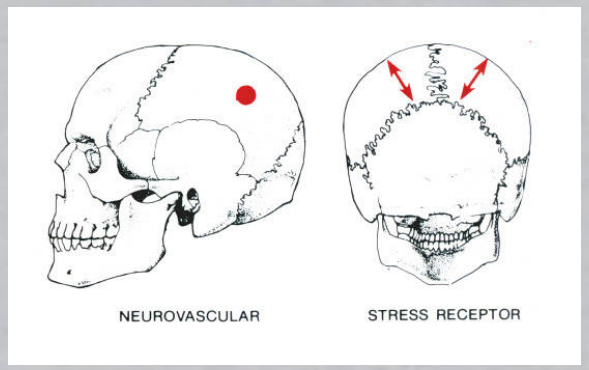


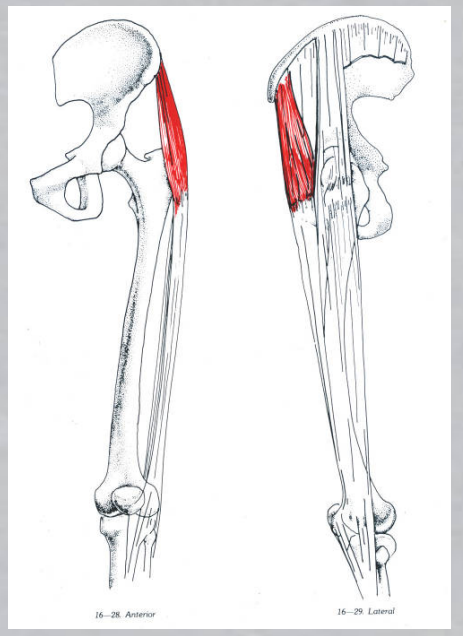



Tensor Fascia Lata —
Thigh in medial rotation,
flexion, and abducted

Tensor Fascia Lata







Tensor Fascia Lata



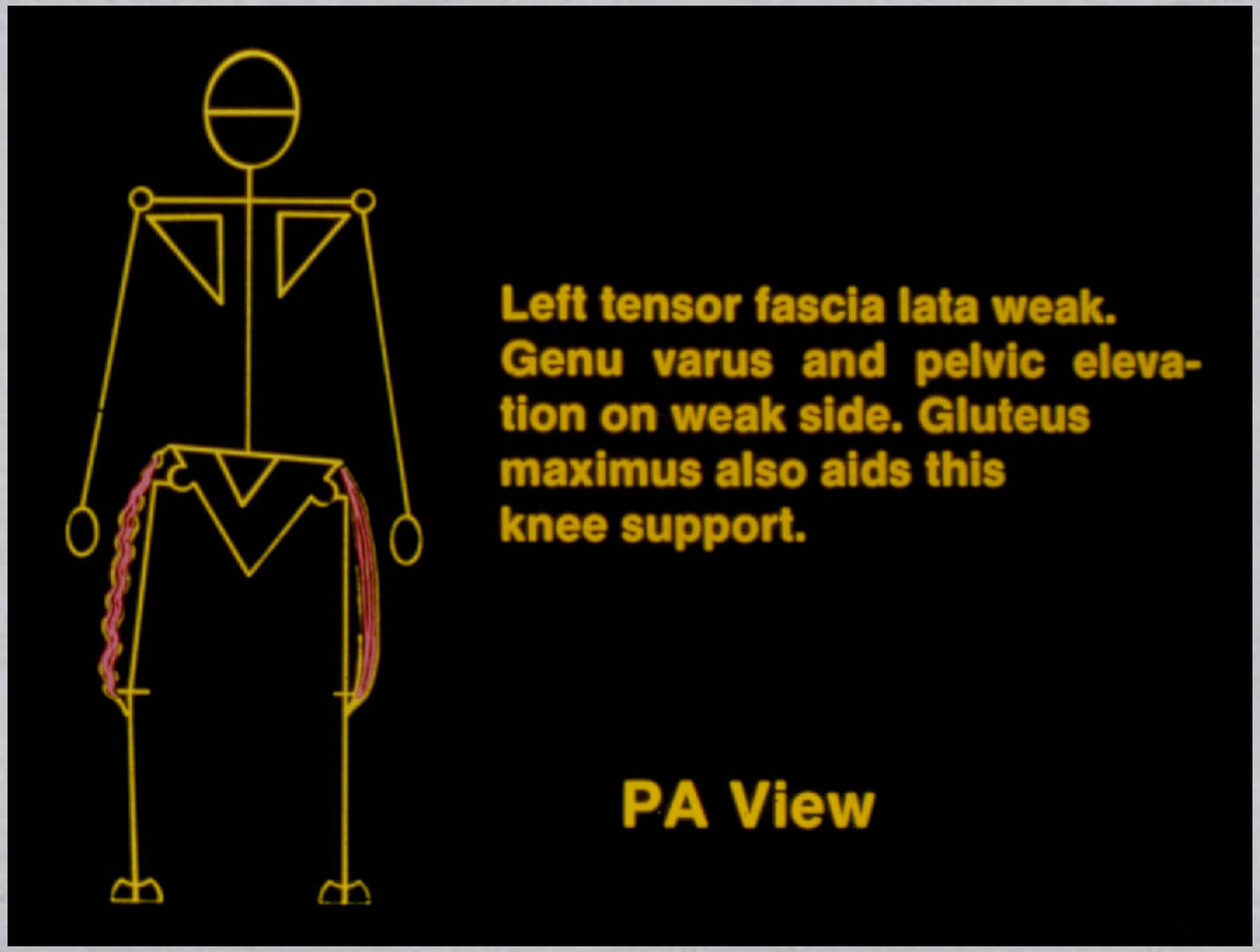
Large Intestine

Large Intestine Meridian

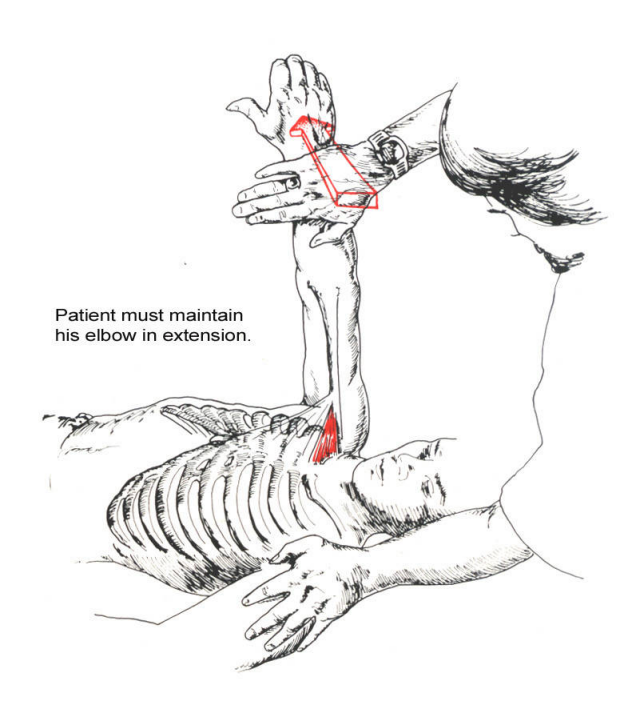
Nerve Supply:
Superior Gluteal, L4, L5, S1

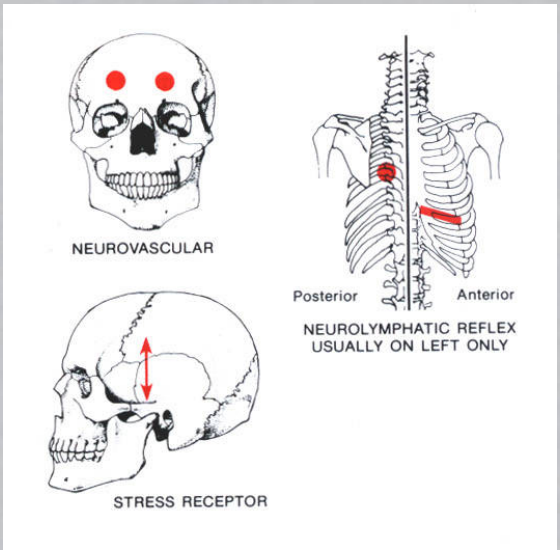
Common Subluxations:
TS Line L4
Assoc. Pt. L4, 5

Nutrition:
Acidophilus
Fenugreek
Comfrey
Vitamin D

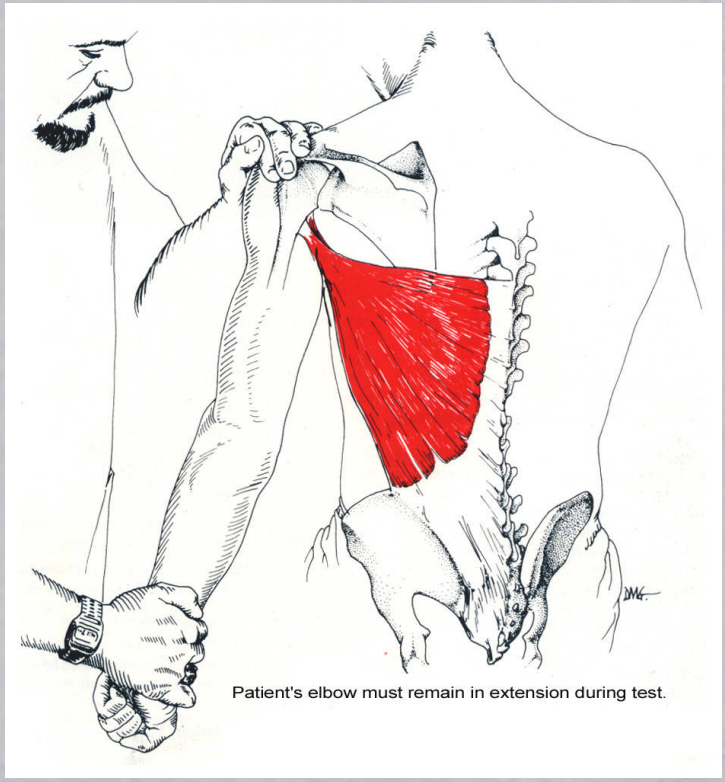

Left tensor fascia lata weak. Genu varus and pelvic elevation on weak side. Gluteus maximus also aids this knee support.
PA View

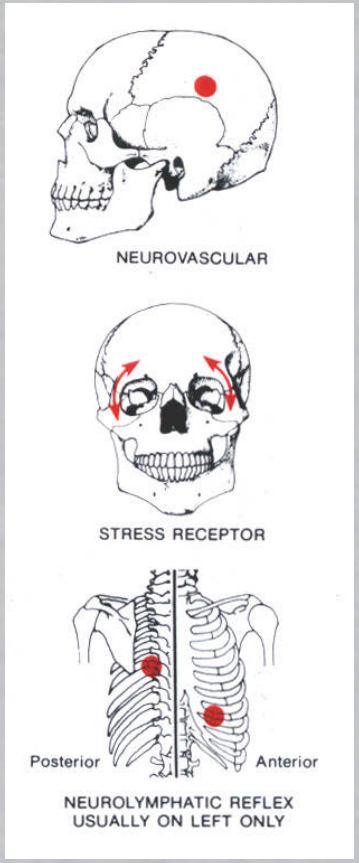
Pectoralis Major - Clavicular



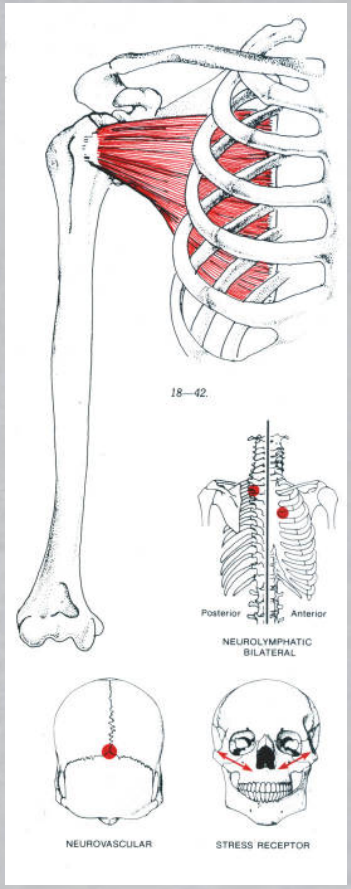


Latisimus Dorsi

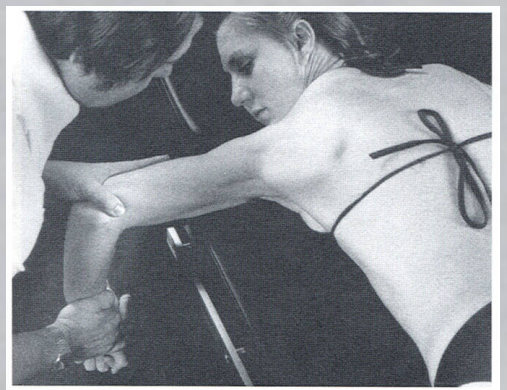




Subscapularis

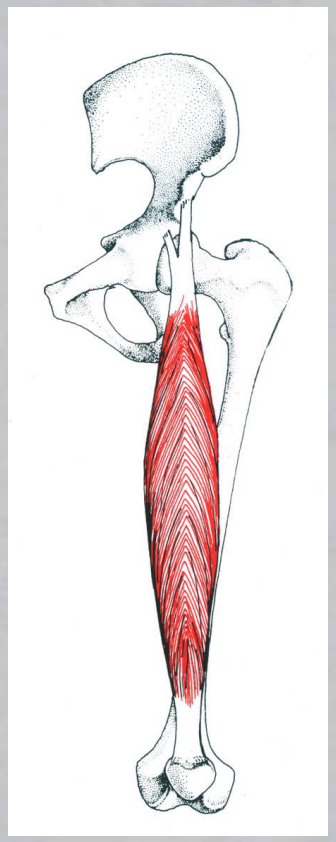


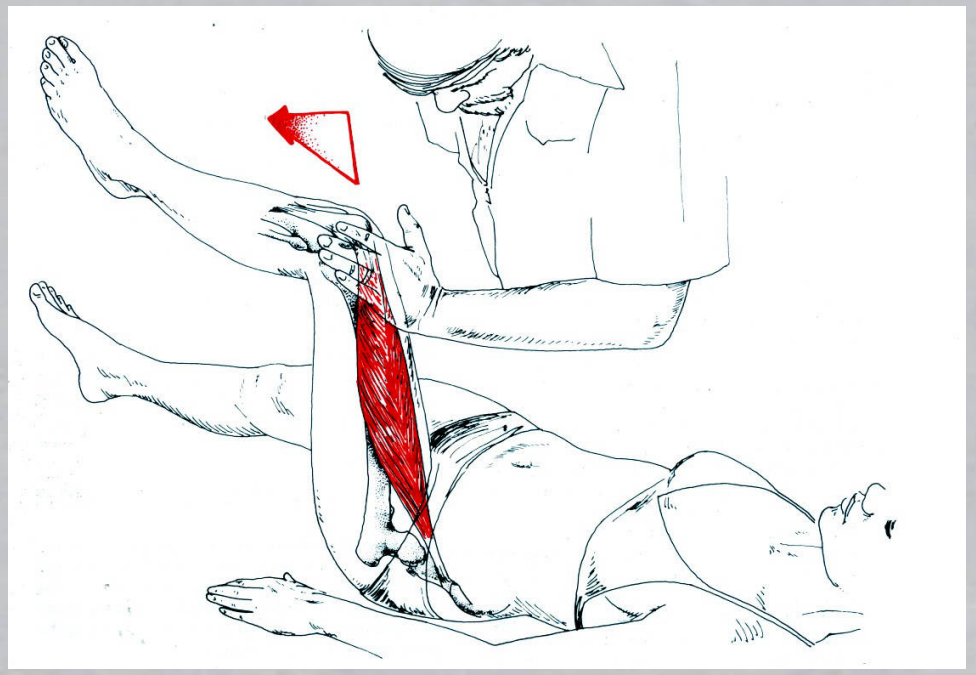




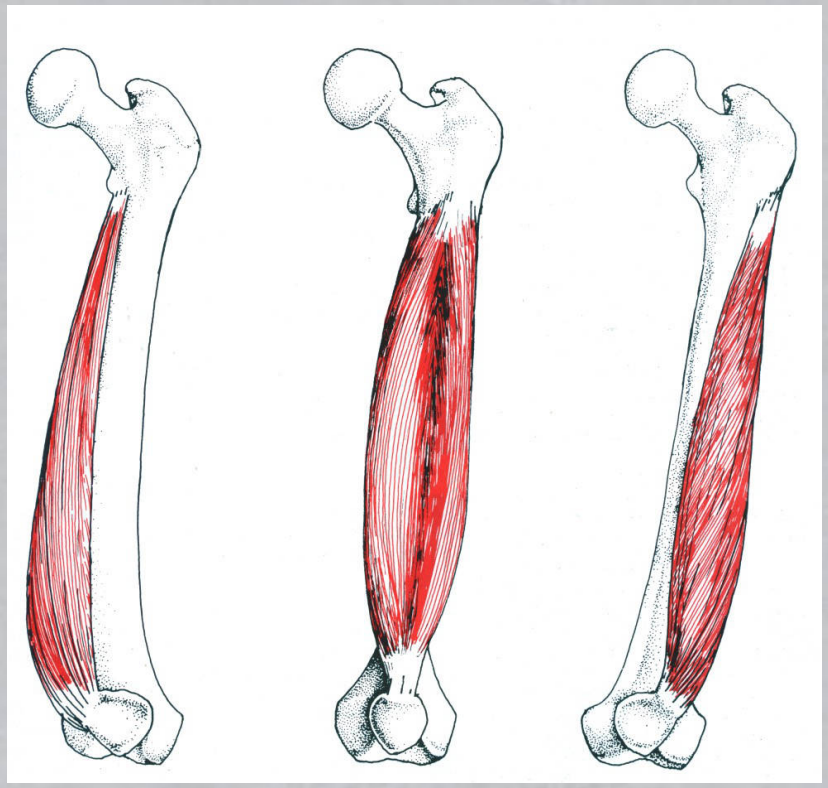
Failure of scapula to be stabilized by rhomboids and middle trapezius.

Quadriceps

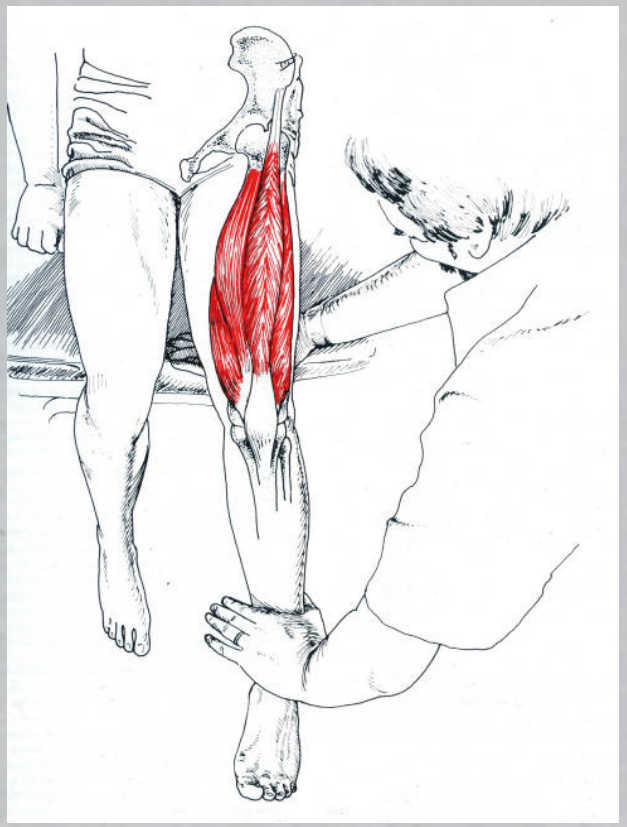


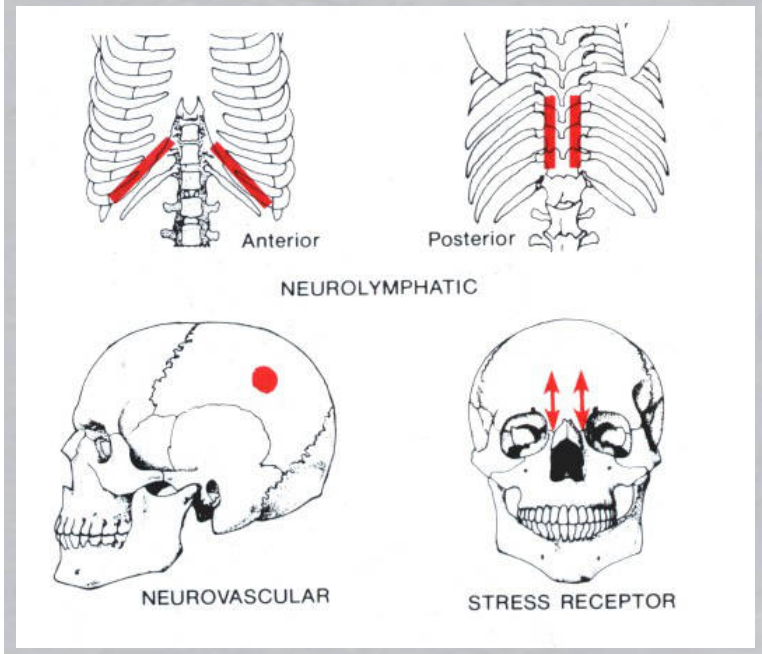


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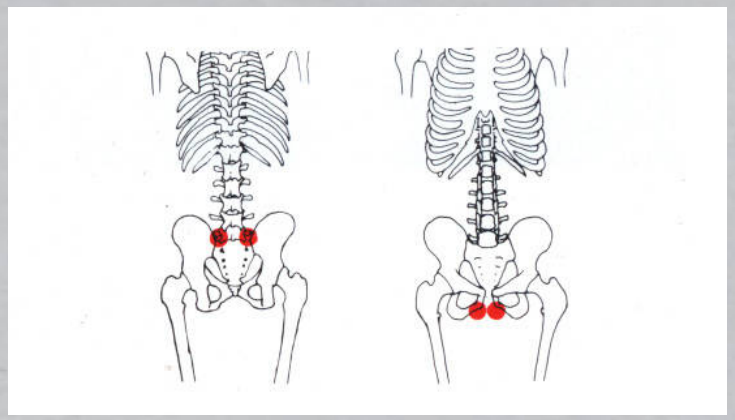


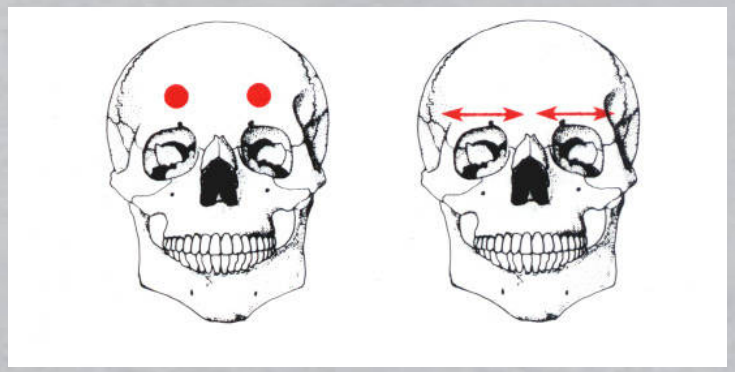
Quadriceps

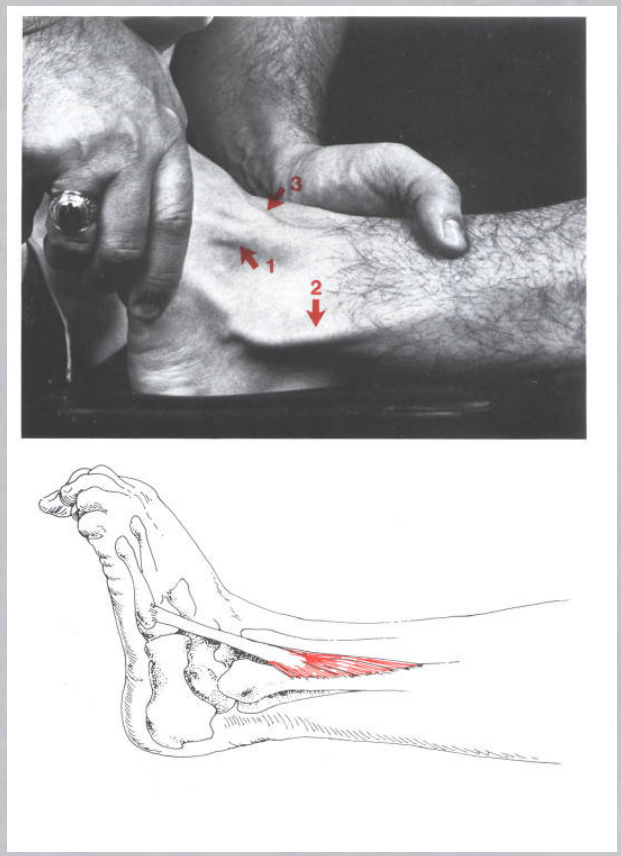



Anterior
Posterior
NEUROLYMPHATIC
NEUROVASCULAR
STRESS RECEPTOR

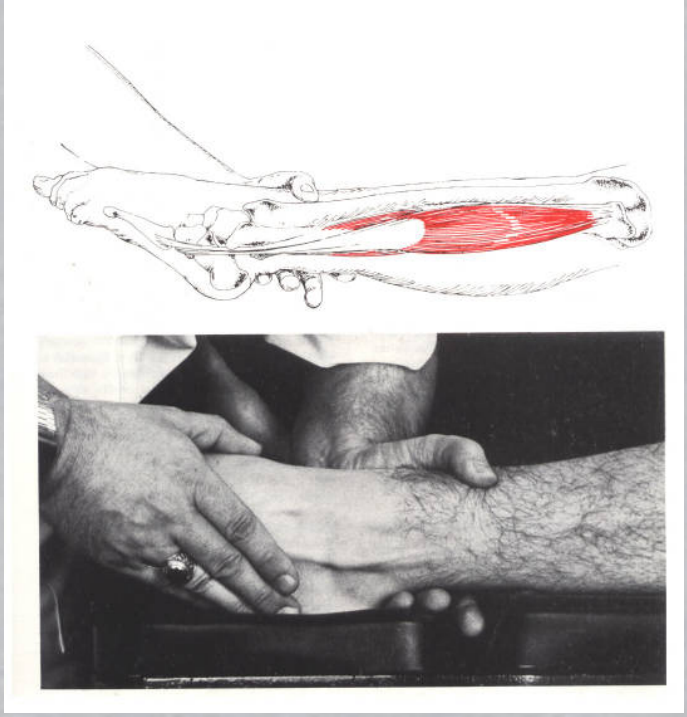
Peroneus Tertitus

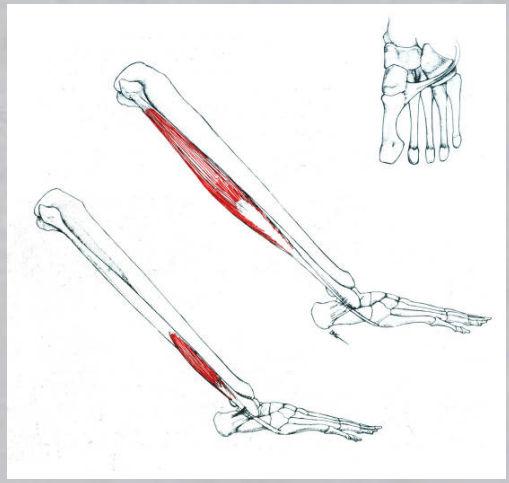


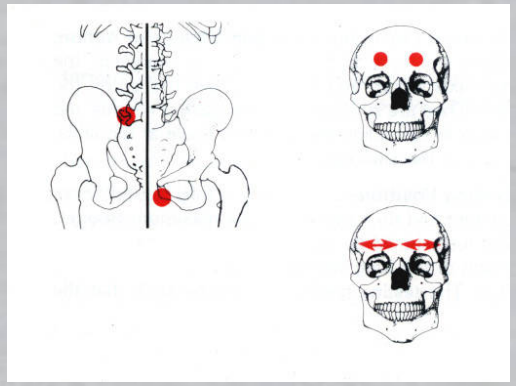




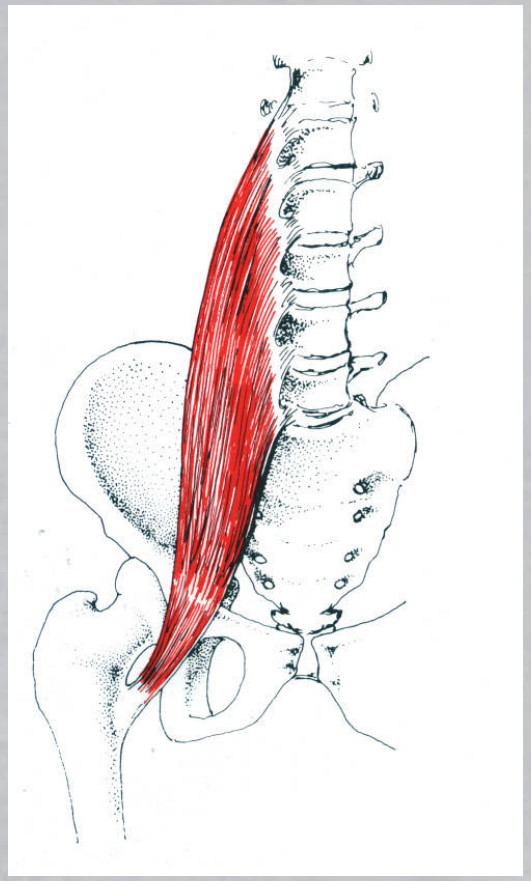
Peroneus Longus and Brevis

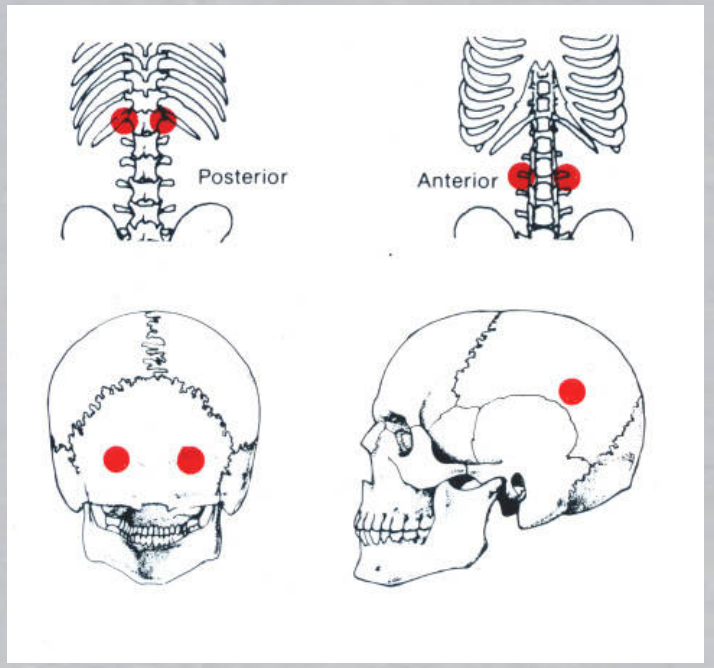




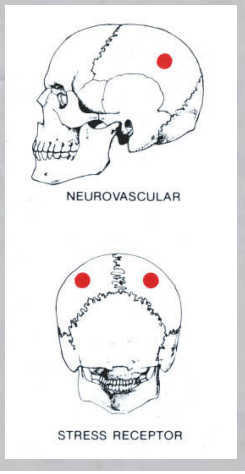


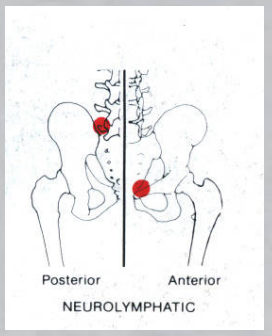
Psoas

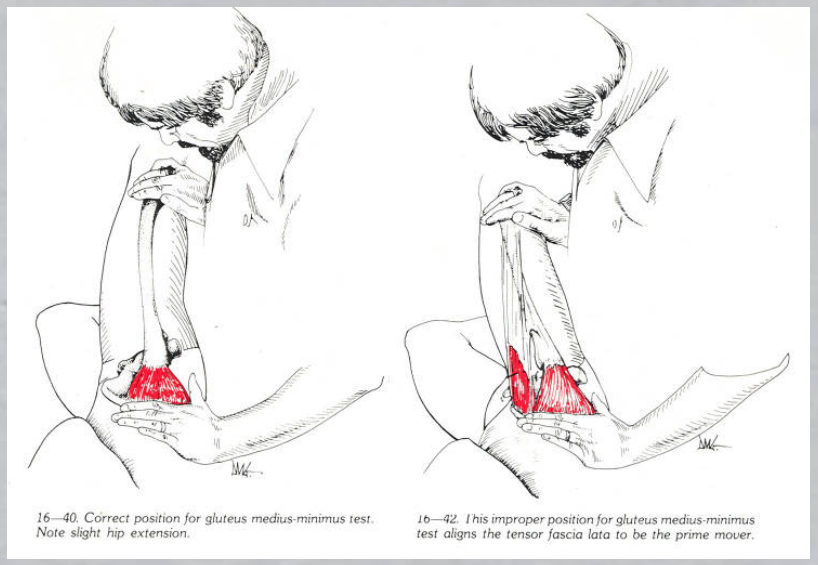




Gluteus Medius/ Gluteus Minimus

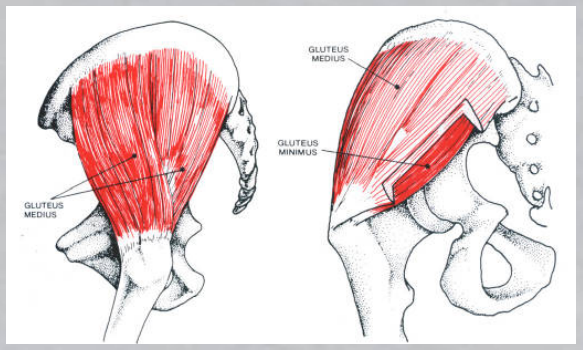




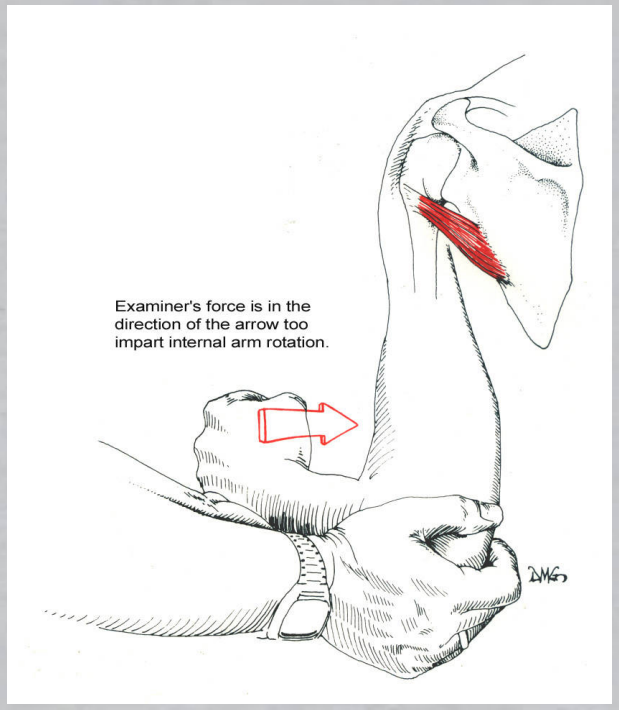


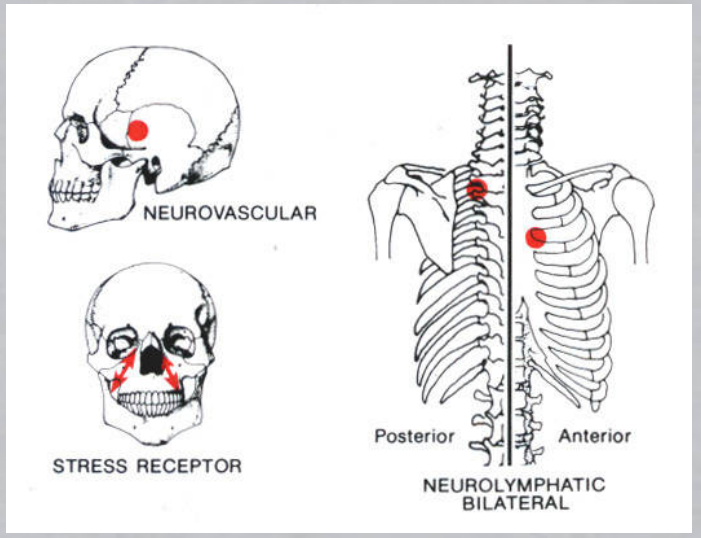
16—40. Correct position for gluteus medius-minimus test. Note slight hip extension.

16—42. This improper position for gluteus medius-minimus test aligns the tensor fascia lata to be the prime mover.

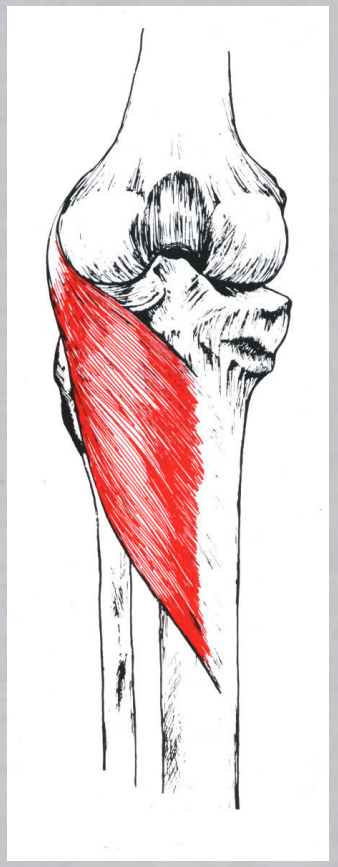


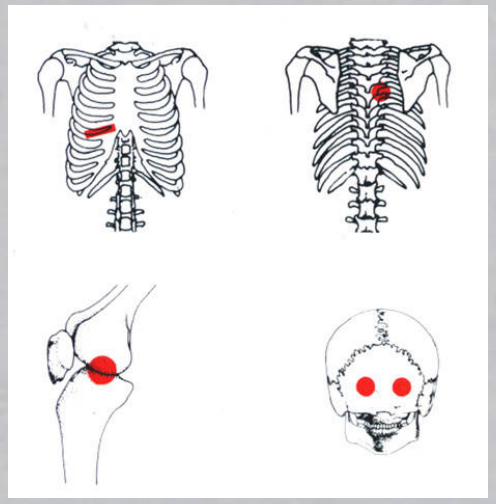
Teres Minor

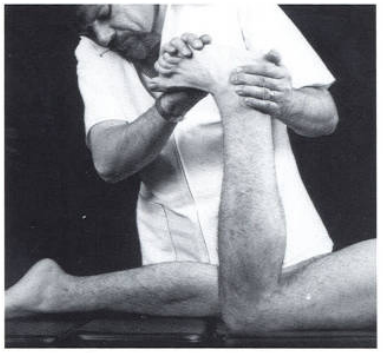

Examiner's force is in the direction of the arrow too impart internal arm rotation.


NEUROVASCULAR
STRESS RECEPTOR
Posterior
Anterior
NEUROLYMPHATIC
BILATERAL

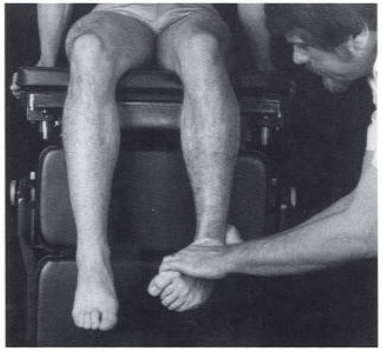
Popliteus





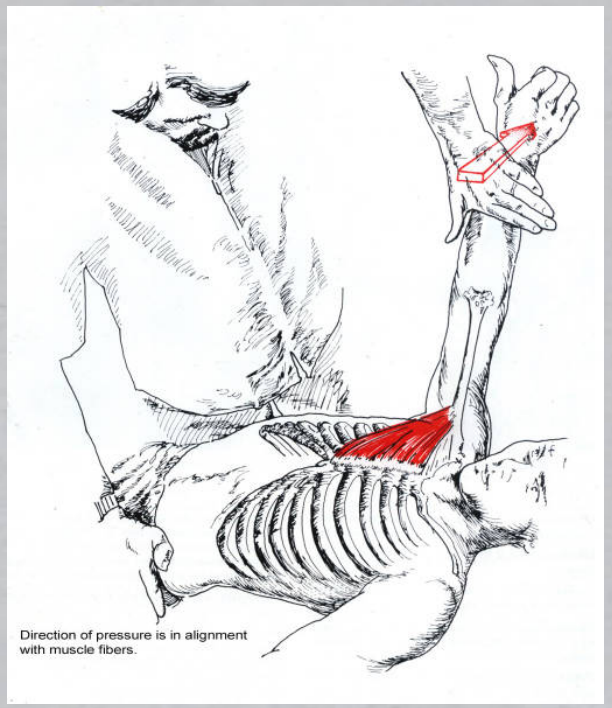


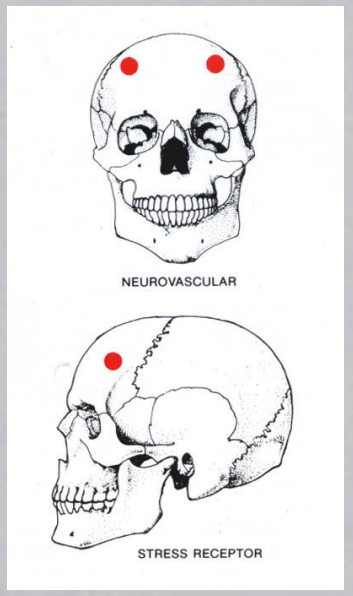
. Examiner observes for tibial tubercle rotation.

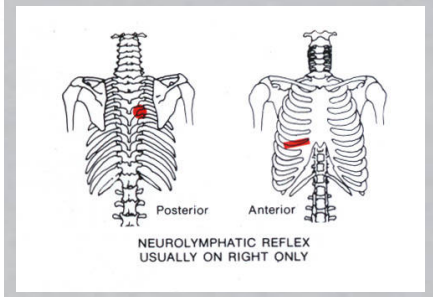


Seated test with observation for tibial rotation.

Pectoralis Major - Sternal







Special Applications of Artful Manual Muscle Testing

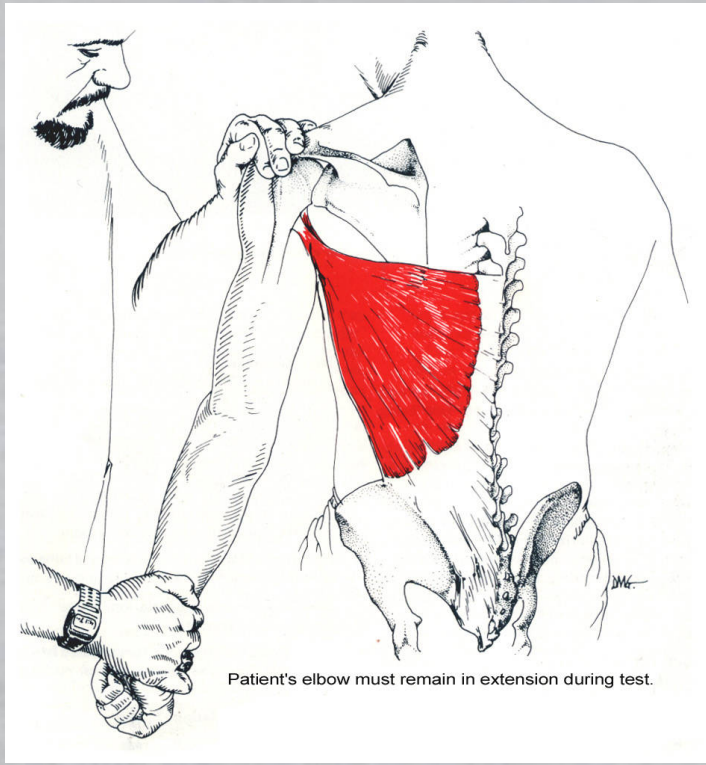
Demonstration and practice of muscle testing procedures for:

- Screening for Vertical Heterophoria and/or Binocular Vision Disorder
- Screening for TMJ disorders
- Evaluating left brain/right brain imbalances
- Assessing need for cranial manipulation
- Assessing need for releasing fascia of specific muscle groups
- Assessing need for treating adrenal gland dysfunction
- Assessing need for treating the lymphatic system
- Screening emotional stress affecting the neuromuscular system

Some of the Images in the following slides were created with the help of ChatGPT and Google Gemini

Vertical Heterophoria and Binocular Vision Disorder Screening

1. BASELINE: Test standing Latissimus to establish baseline strength



2. Close Right eye and retest

3. Close Left eye and retest

4. Close both eyes and on the count of 3 open eyes and retest

TMJ PROTOCOL

1. Find strong muscle (e.g. TFL)
2. Have patient therapy localize the TMJ with thumb and 5th finger opposing each other, while 2nd, 3rd, and 4th fingers touch jaw joints.
3. Ask patient to:
   * Bite hard
   * Open a little
   * Open wide
   * Lateralize left
   * Lateralize right
   * Extrude jaw/Retrude jaw
   * Chew slowly (aerobic)
   * Chew fast (anaerobic)
   * Swallow
   * Talk
4. If any procedures described above weaken the patient, have them repeat the action while holding only the left side of jaw alone and then only the right side of jaw. Whichever side they were touching when their muscle weakened, is the involved side.

   (You may need to change their head position up/down or left/right for this problem to display itself.)

TMJ PROTOCOL

(continued)

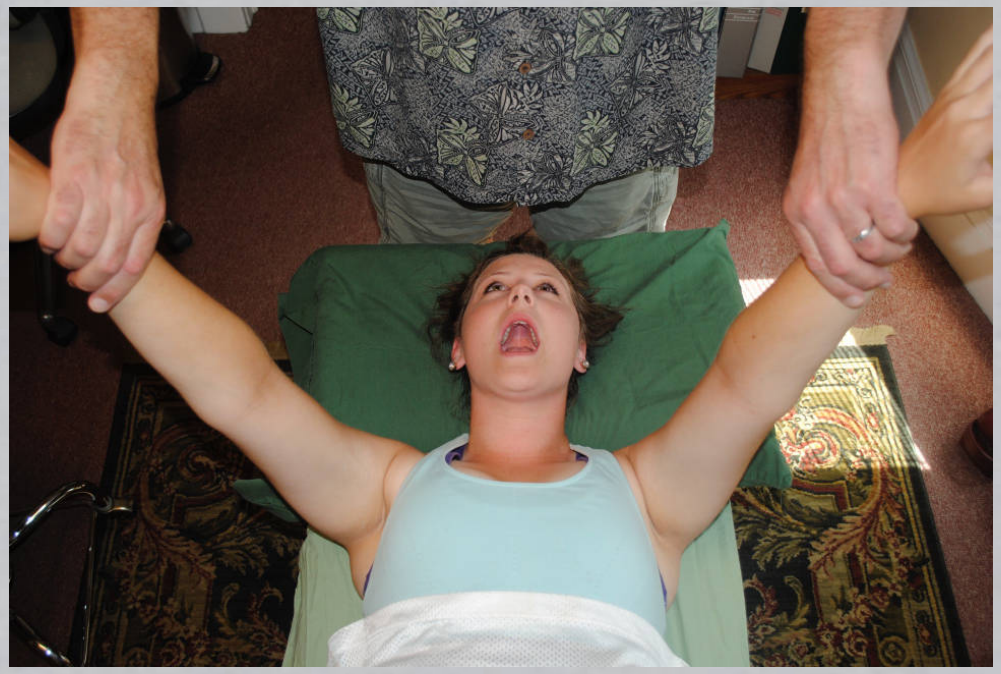
5. There is a specific treatment procedure for each specific pattern of weakness.

6. You may place paper or tongue depressors between their teeth and see if a specific change in vertical dimension changes their bite weakness. For example, if a person weakens when they clench their teeth forcefully, but they no longer weaken when two tongue depressors are placed between their teeth, then they probably need a bite splint that will approximate this correction. In other words, send them to a dentist who does TMJ work.

Final note: The above screening procedure helps confirm that there is a problem with the jaw that needs attention. The patient may have already shown signs and symptoms of TMJ problems in the initial history and physical.



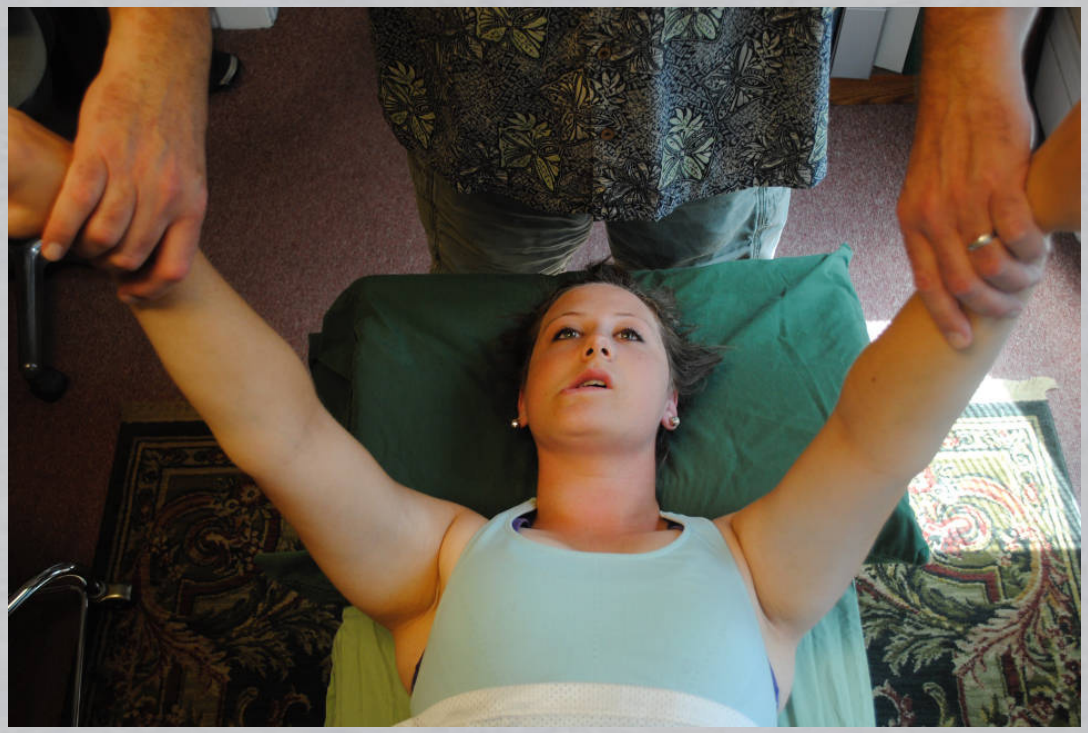
TMJ Screen: Jaw Clenched Tight –Muscles Tested



TMJ Screen: Jaw Opened Wide-Muscles Tested



TMJ Screen: Lateralize Jaw to Left-Muscles Tested



TMJ Screen: Lateralize Jaw to Right-Muscles Tested



TMJ Screen: Extrude Jaw - Muscles Tested



Eye Screen: Patient Closes Eyes and is Muscle Tested



Eye Screen: Patient's Muscles are Tested on Count of 3 upon Opening Eyes



Bilateral Pectoralis Major (Clavicular) Muscle Test

Patient lies supine with both arms elevated and nearly parallel.

Examiner contacts the top/inside aspect of the forearms near the wrists and applies outward pressure.

Patient resists the examiner's force and attempts to hold the starting position.

Left Brain Screening

1. BASELINE

Perform a bilateral muscle test to establish baseline strength.



2. COGNITIVE CHALLENGE

Ask the patient to subtract by 5s from 100 aloud: 100 → 95 → 90 → 85 → 80 → 75 Then immediately retest the muscles. If a weakening occurs, treat the left hemisphere.



3. TREATMENT

Tap around the circumference of the left temporal bone in a clockwise direction while the patient hums (right brain activity).

4. RETEST

Repeat the subtraction task and muscle test. Confirm that weakening no longer occurs during the cognitive challenge.

Right Brain Screening

1. BASELINE

Perform a bilateral muscle test to establish baseline strength



2. HUMMING

Ask the patient to hum the Happy Birthday song and repeat the muscle test immediately after completion of humming. If a weakening occurs, treat the right hemisphere.



3. TREATMENT

Tap around the circumference of the right temporal bone in a counterclockwise direction while the patient subtracts 5s from 100 until they've reached 75 (left brain activity).

4. RETEST

Retest to see that weakening no longer occurs during humming.

Cranial Screening Procedure

1. Test bilateral pectoralis muscles to confirm intact strength

2. Ask patient to inhale fully → retest

3. Ask patient to take extra inhalation to their max → retest

4. Ask patient to exhale half of their air → retest

5. Ask patient to let all air out → retest



6. Ask patient to forcefully exhale all remaining air → retest

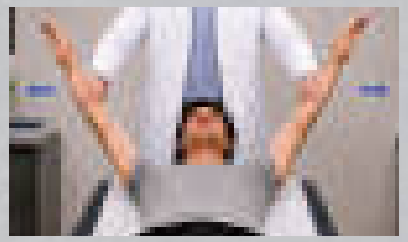
7. Ask patient to take a half breath in → retest

** If a weakening occurs during any of these tests, it indicates the possibility of a specific cranial suture restriction that requires specific treatment.

Fascial Shortening Screening Test

- Any muscle that weakens immediately after stretching, may indicate an imbalance between the muscle and its overlying fascia. This may occur anywhere in the body.
- Often, the pectoral muscles are tight and will weaken with fascial stretching.

1. BASELINE MUSCLE TEST



2. STRETCHING

Ask patient to sit up and perform a rowing motion pulling the elbows back 3x to stretch the pectoralis muscles.



3. RETEST

Ask patient to lay down and perform the bilateral muscle test above once again.



Weakness observed

4. TREATMENT

Direct myofascial release as if to iron out the fascia that overlies the muscle.

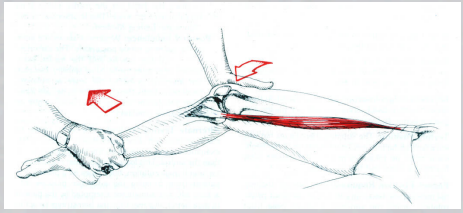
use shea butter or a small amount of lotion to avoid excessive friction



Screening Adrenal Dysfunction

- Patients with Adrenal stress will often exhibit…
  - Inhibition of specific muscles including the Sartorius, Gracilis, Gastrocnemius, Tibialis Posterior, and Soleus (see next 2 slides).
  - A unique response to ligament stretch at specific joints, particularly the knee and ankle. This “Ligament Stretch Adrenal Stress” phenomenon can occur anywhere in the body.

1. **MUSCLE TEST THE SARTORIUS**



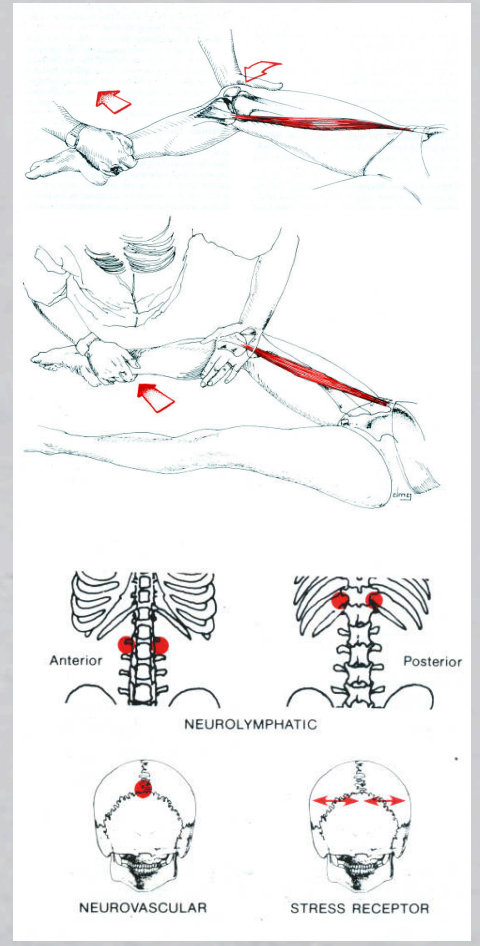
2. STRETCH



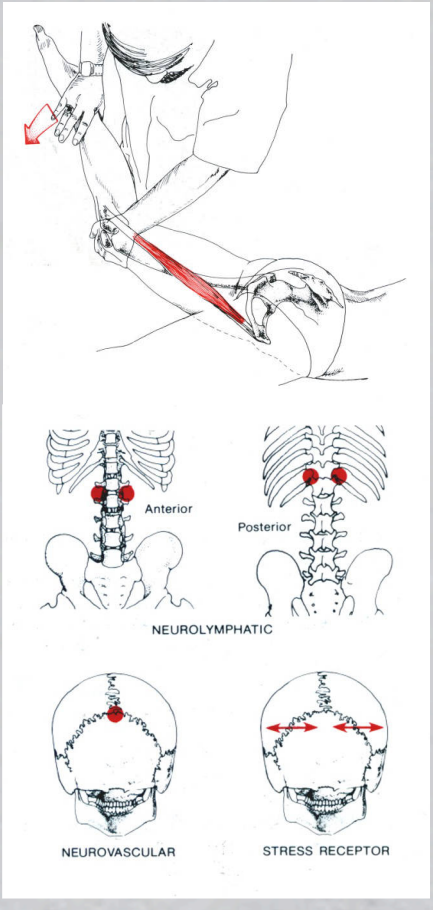
Stretch the medial side of the knee (ligament) 3 times, then retest the sartorius. If the muscle weakens, there may be adrenal dysfunction present.

- When a patient weakens touching their Chapman’s Reflex Points for the adrenal glands, or an adrenal gland related muscle strengthens when touching the Chapman Reflex Point, it is an indication of positive adrenal stress.

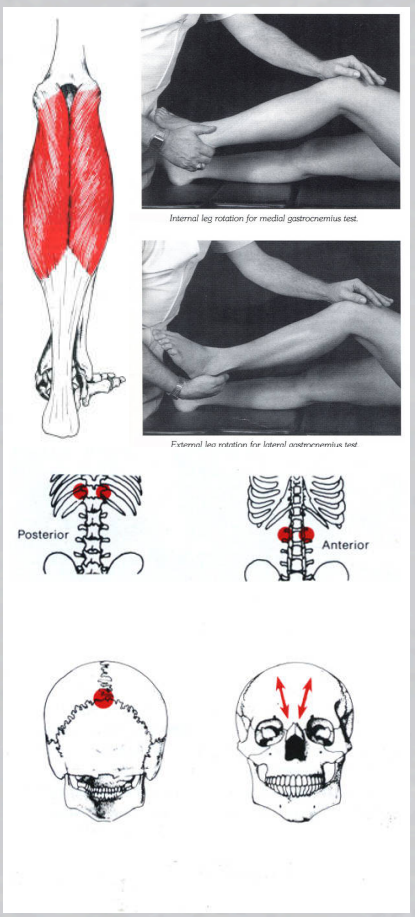
Sartorius



Gracilis

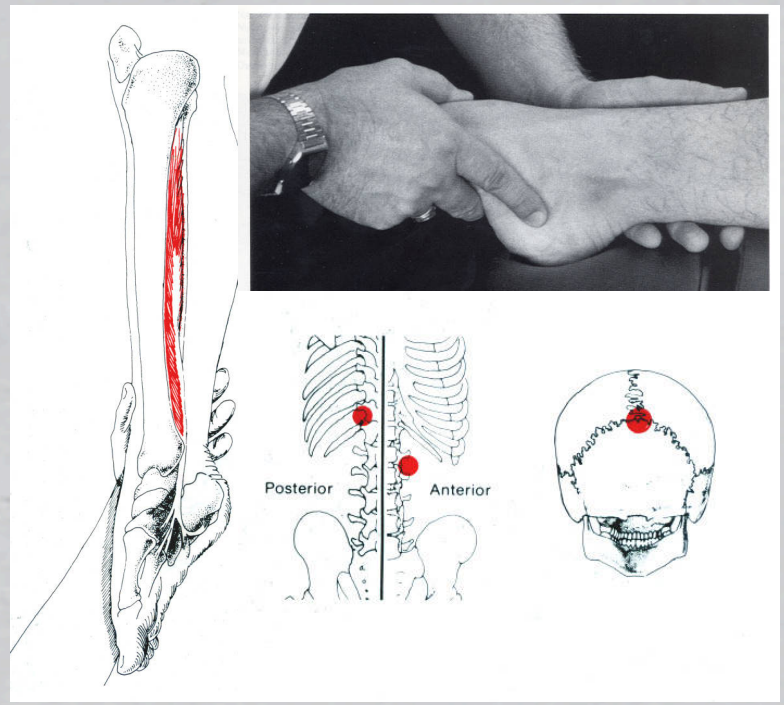


Gastrocnemius

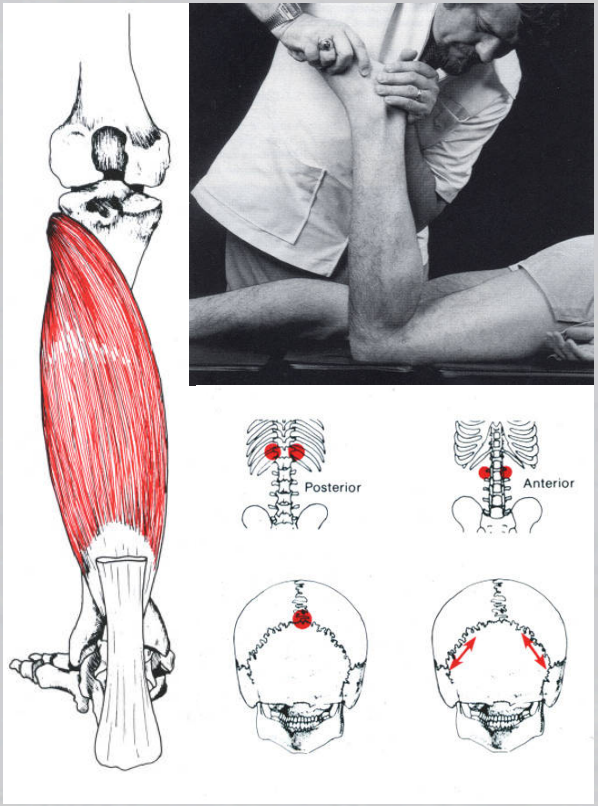


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Tibialis Posterior



Soleus



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Screening Lymphatic Dysfunction

- The lymph system may become blocked at different locations in the body. A good screening test to determine if the lymph is successfully draining upward through the thoracic duct into the left subclavian vein, is known as the “Retrograde Lymphatic” test.

1. BILATERAL MUSCLE TEST



2. BRIDGE & RETEST

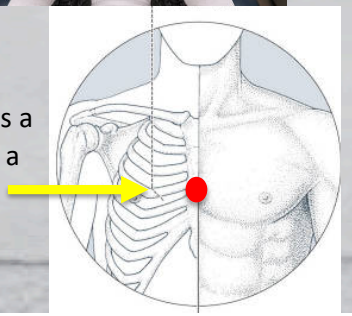
Have patient bridge for 5 seconds and retest muscle while in bridge. If muscle weakens while in the bridge position, it may indicate a restriction in the thorax and thoracic junction where the left subclavian vein receives lymph fluid.





3. TREATMENT

Myofascial Release of the pectoralis minor muscles and evaluation and treatment of T1, first rib, clavicle and scalene muscles. Additionally, there is a master lymphatic reflex point to massage on the midline of the sternum in a depression level with the junction of the fourth intercostal space and the sternum (CV-17). The point will be very tender.



Emotional Stress Test

- All humans experience stress as a part of life. However, when it triggers physical or mental symptoms, it must be addressed. There are many approaches to stress management, but a quick screening tool helps to determine if stress is currently creating adverse problems for the patient.

1. BILATERAL MUSCLE TEST



2. ADD STRESS & RETEST

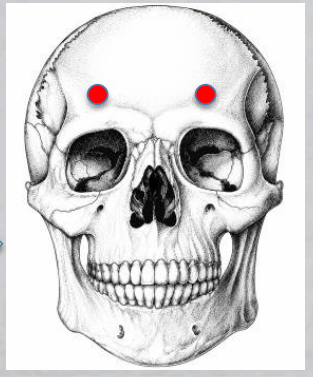
Have the patient close their eyes and think of the most stressful thing in their life. Ask the patient if they can visualize the stress.

→ When they say yes, retest while keeping eyes closed

→ Often the patient will exhibit subtle trembling of their eyelids while actively involved in visualizing stress.

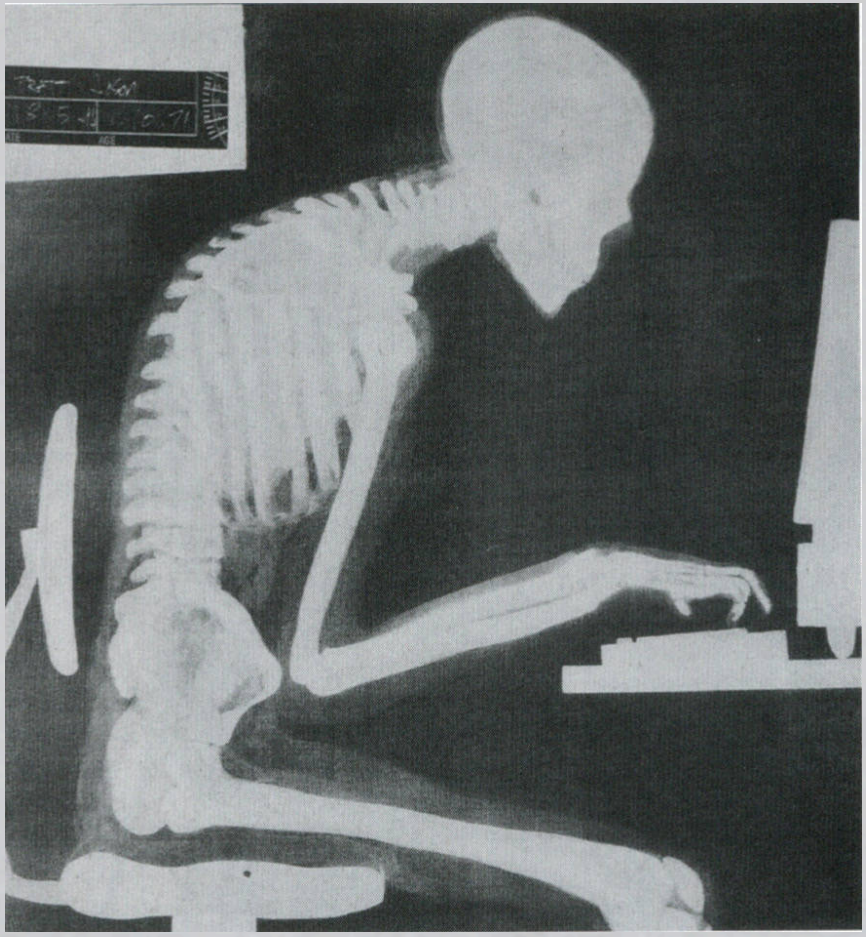
3. TREATMENT

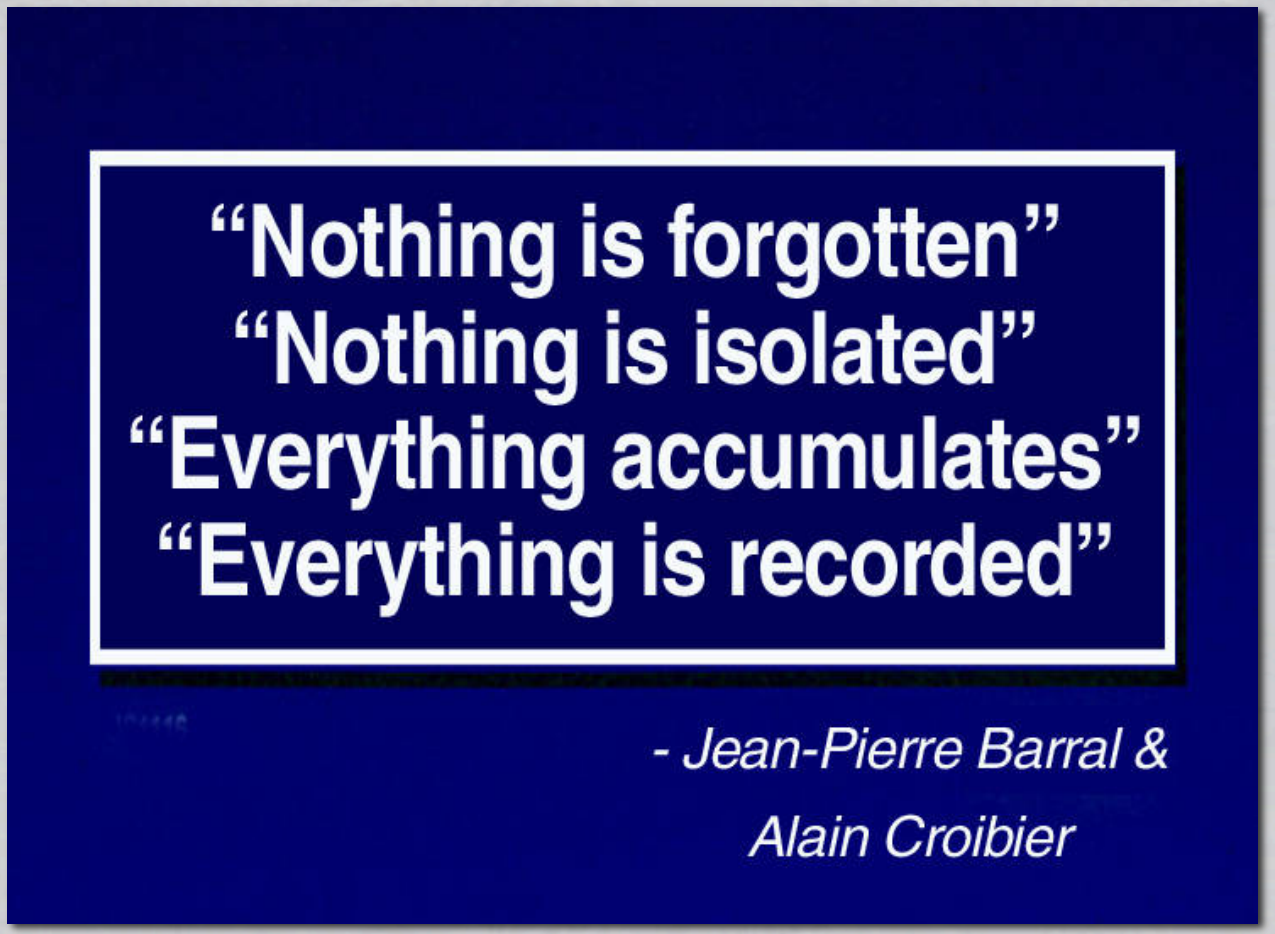
Lightly stretch the Bennett points with three finger pads of each hand pulling slightly up and outward. Wait until there are steady equal symmetrical pulsations bilaterally coming from the forehead.



So, Who is the Osteopath?

- The osteopath is a mechanic in the noblest sense of the word—really a micro-mechanic. We all have two hands but who among us really knows how to use them? No one argues with the wine taster who, by using his palette, can tell us the characteristics of a wine—its region, its vineyard or even its vintage. The education of touch can go at least as far.
  - **Barral**




“Nothing is forgotten”
“Nothing is isolated”
“Everything accumulates”
“Everything is recorded”
- Jean-Pierre Barral &
Alain Croibier

Witzelsucht:

(vit'sel-zo͞okt) [Ger.] a mental condition characteristic of frontal lobe lesions and marked by the making of poor jokes and puns and the telling of pointless stories, at which the patient himself is intensely amused.

- Dorland's Illustrated Medical Dictionary Edition 28


417
Jay Sandweiss D.O.

THE NEW YORKER

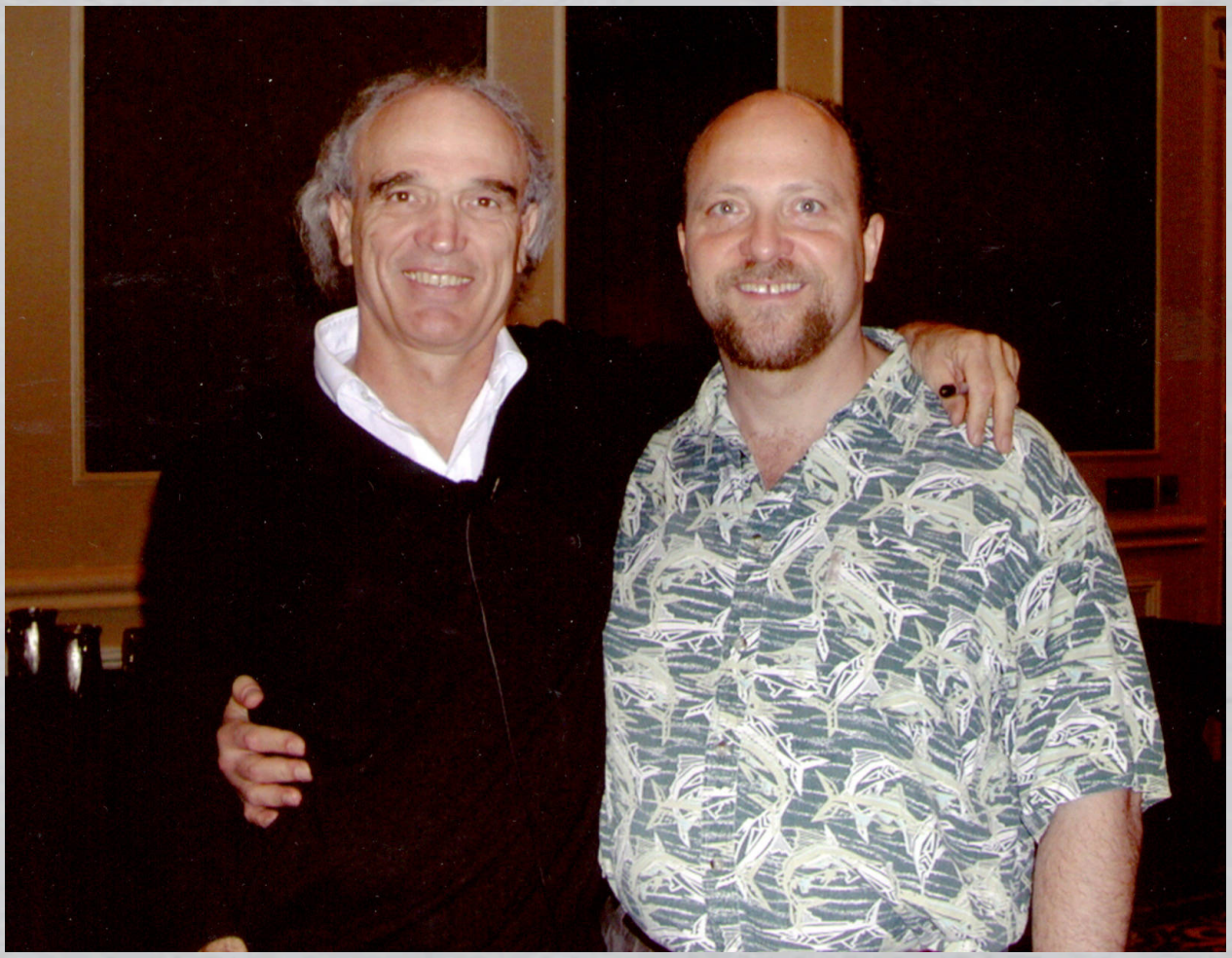


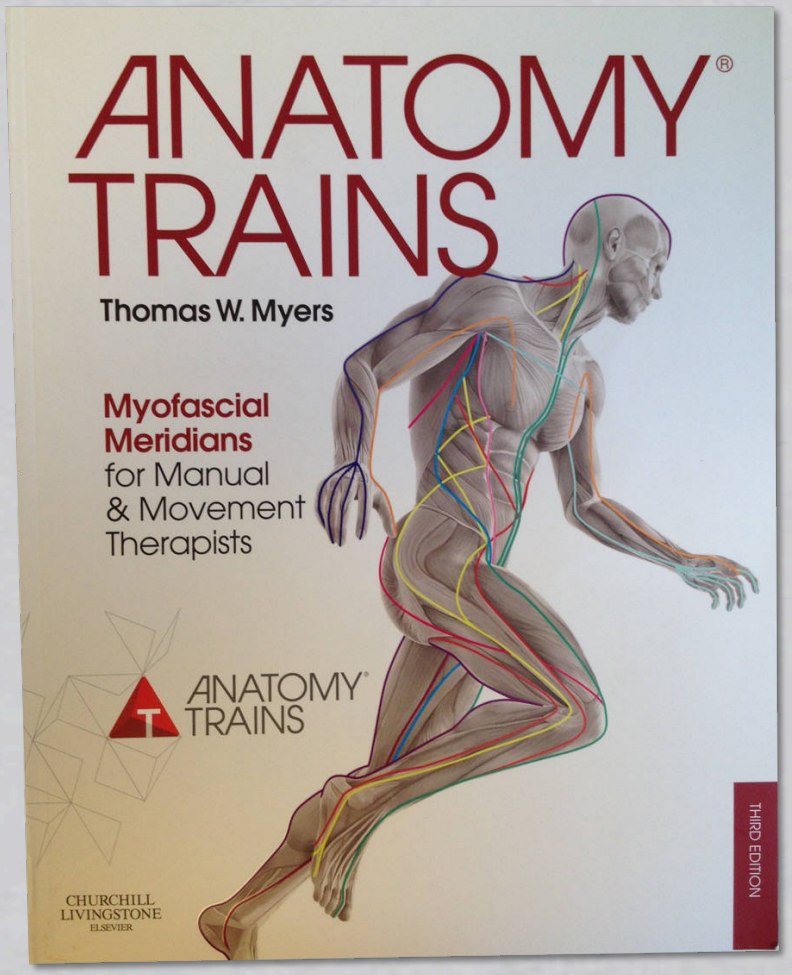
"Unfortunately, your plan covers only doctors who couldn't possibly help you in any way."



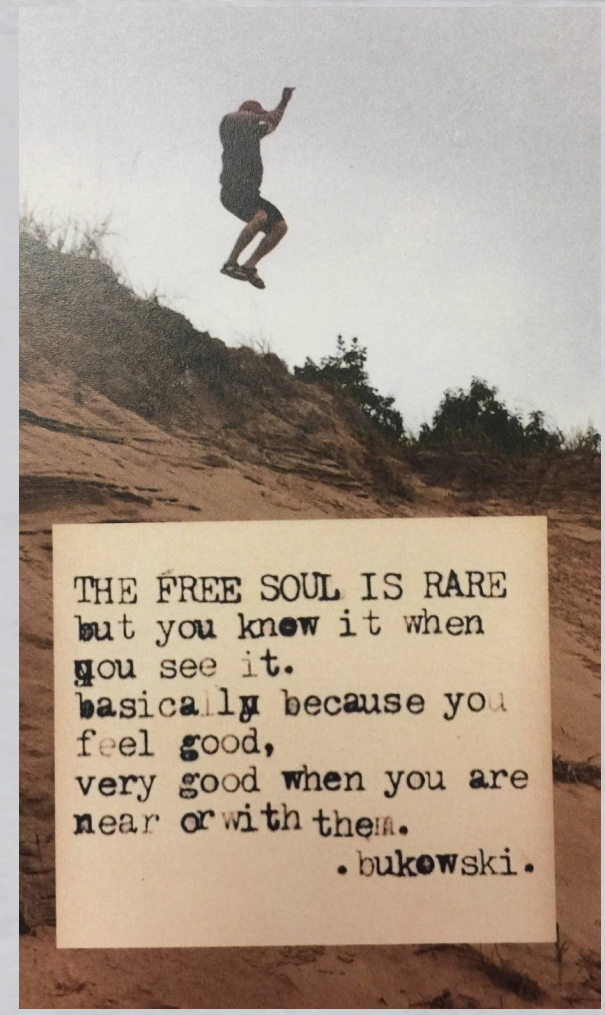
Dr. George J. Goodheart

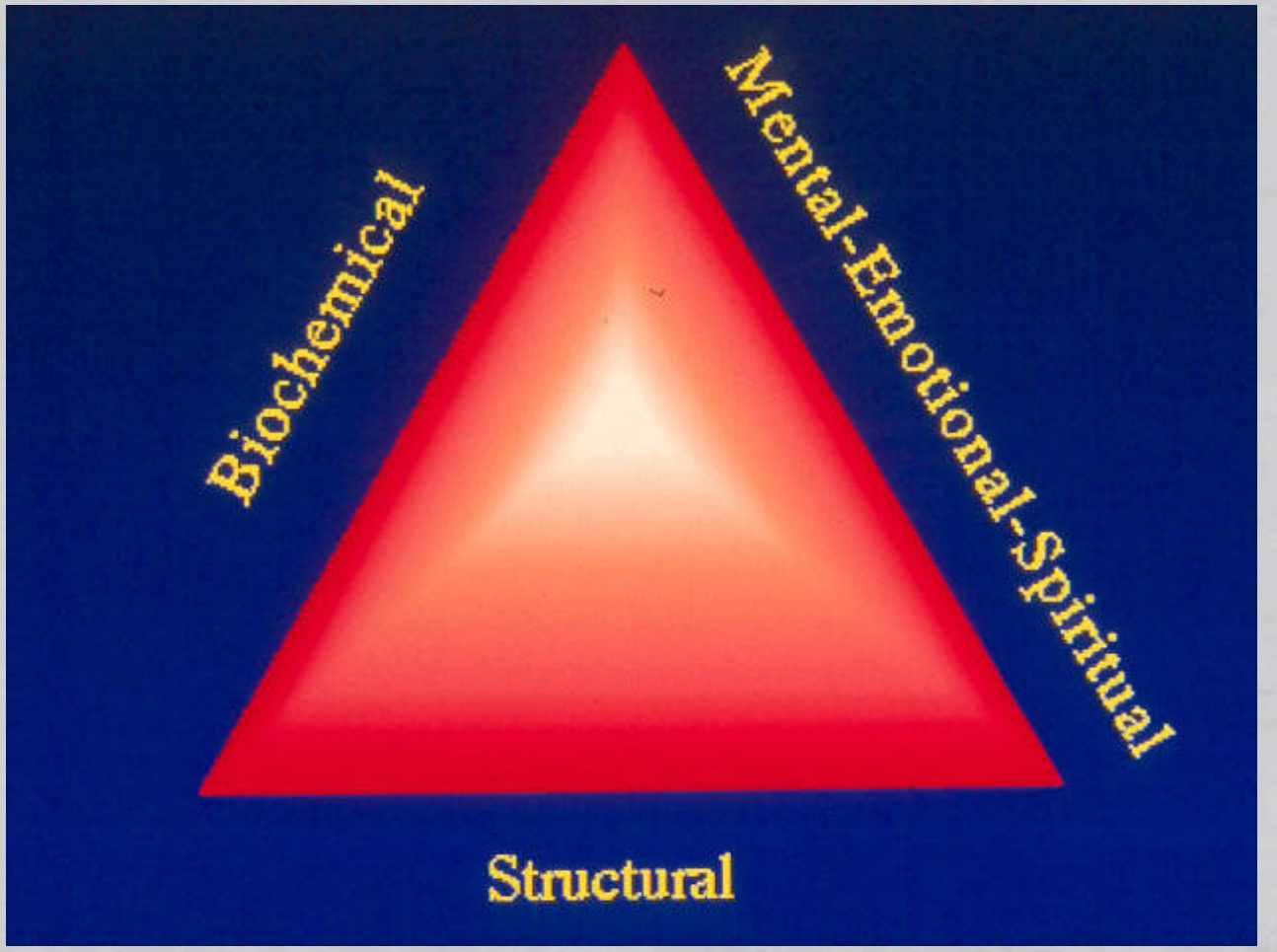


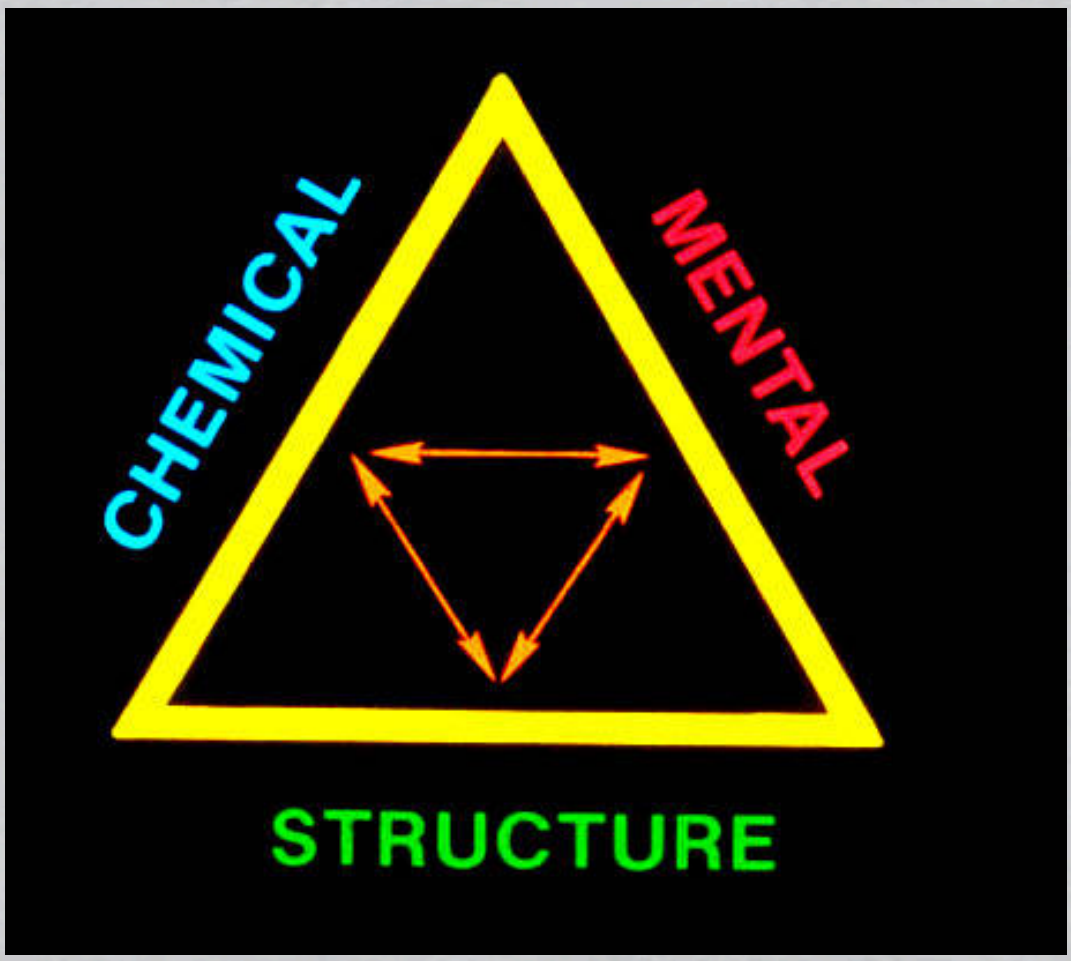


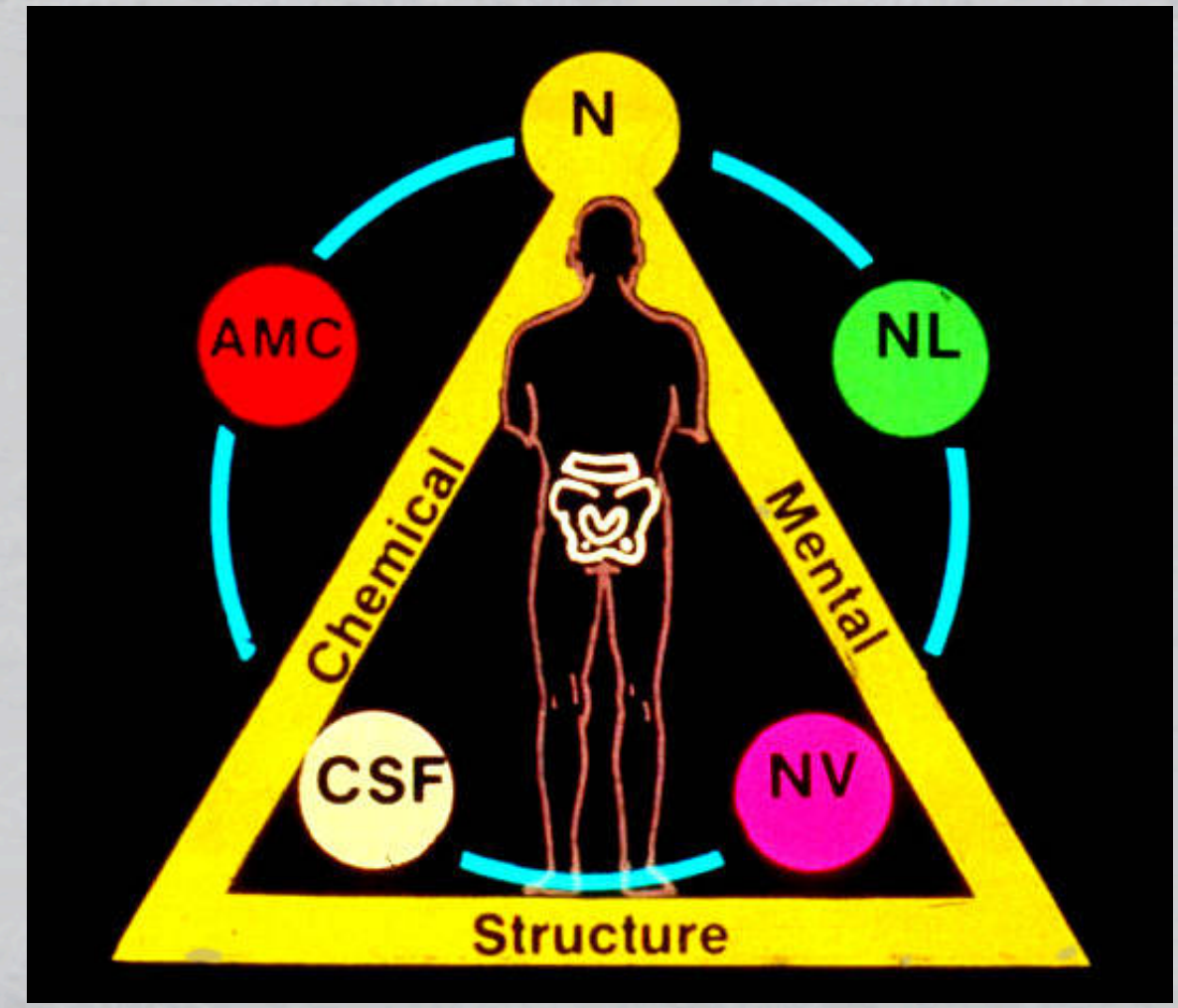

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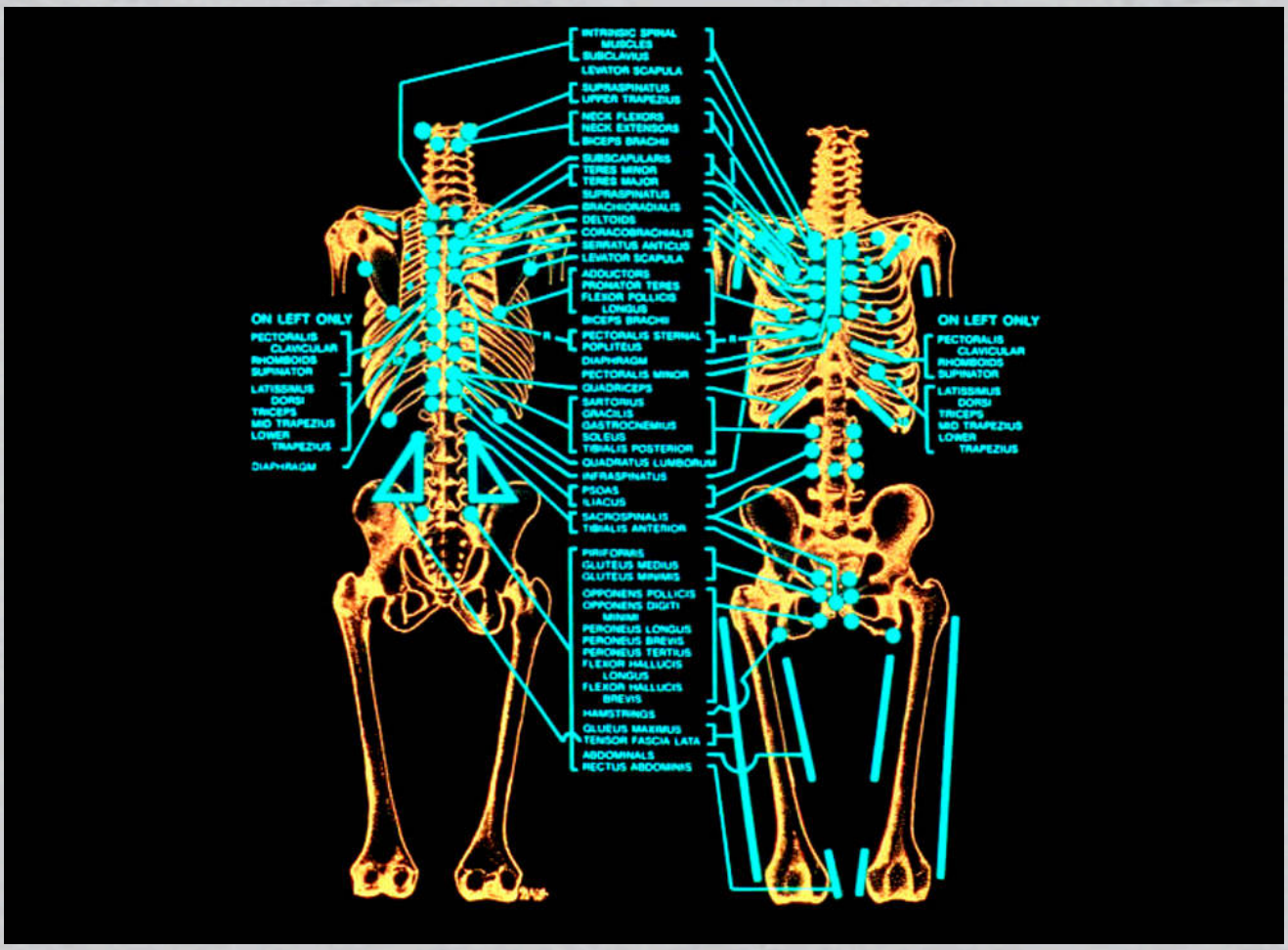


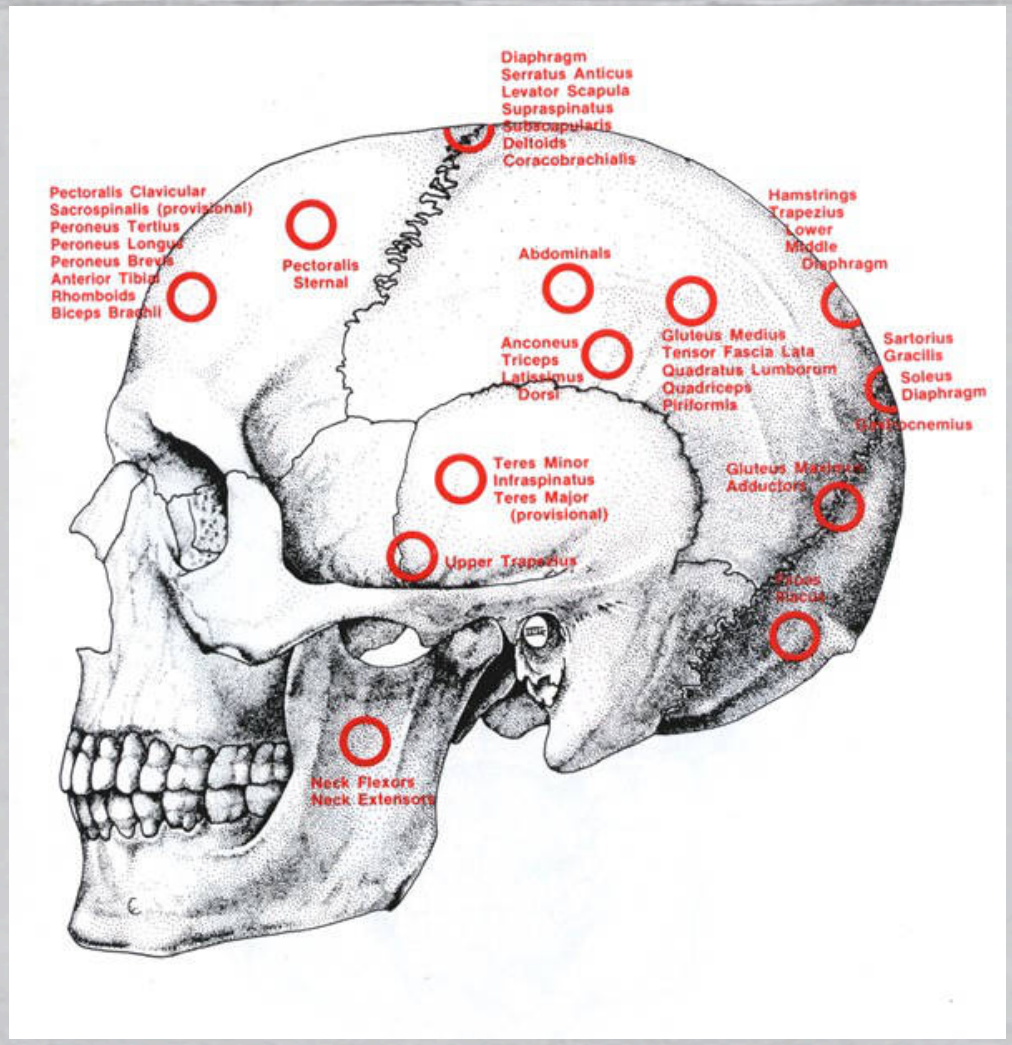

THE FREE SOUL IS RARE
but you know it when
you see it.
basically because you
feel good,
very good when you are
near or with them.
.bukowski.


Biochemical
Mental-Emotional-Spiritual
Structural


CHEMICAL
MENTAL
STRUCTURE


N
AMC
NL
Chemical
Mental
CSF
NV
Structure


INTRINSIC SPINAL MUSCLES
SUBCLAVIUS
LEVATOR SCAPULA
SUPRASPINATUS
UPPER TRAPEZIUS
NECK FLEXORS
NECK EXTENSORS
BICEPS BRACHII
SUBSCAPULARIS
TERES MINOR
TERES MAJOR
SUPRASPINATUS
BRACHIORADIALIS
DELTOIDS
CORACOBRACHIALIS
SERRATUS ANTICUS
LEVATOR SCAPULA
ADDUCTORS
PRONATOR TERES
FLEXOR POLLICIS LONGUS
BICEPS BRACHII
PECTORALIS STERNAL
POPLITEUS
DIAPHRAGM
PECTORALIS MINOR
QUADRICEPS
SARTORIUS
GRACILIS
GASTROCNEMIUS
SOLEUS
TIBIALIS POSTERIOR
QUADRATUS LUMBORUM
INFRASPINATUS
PSOAS
ILIACUS
SACROSPINALIS
TIBIALIS ANTERIOR
PIRIFORMIS
GLUTEUS MEDIUS
GLUTEUS MINIMIS
OPPONENS POLLICIS
OPPONENS DIGITI MINIMI
PERONEUS LONGUS
PERONEUS BREVIS
PERONEUS TERTIUS
FLEXOR HALLUCIS LONGUS
FLEXOR HALLUCIS BREVIS
HAMSTRINGS
GLUEUS MAXIMUS
TENSOR FASCIA LATA
ABDOMINALS
RECTUS ABDOMINIS
ON LEFT ONLY
PECTORALIS CLAVICULAR
RHOMBOIDS
SUPINATOR
LATISSIMUS DORSI
TRICEPS
MID TRAPEZIUS
LOWER TRAPEZIUS
DIAPHRAGM
ON LEFT ONLY
PECTORALIS CLAVICULAR
RHOMBOIDS
SUPINATOR
LATISSIMUS DORSI
TRICEPS
MID TRAPEZIUS
LOWER TRAPEZIUS


Diaphragm
Serratus Anticus
Levator Scapula
Supraspinatus
Subscapularis
Deltoids
Coracobrachialis
Pectoralis Clavicular
Sacrospinalis (provisional)
Peroneus Tertius
Peroneus Longus
Peroneus Brevis
Anterior Tibial
Rhomboids
Biceps Brachii
Pectoralis Sternal
Abdominals
Hamstrings
Trapezius
Lower
Middle
Diaphragm
Anconeus
Triceps
Latissimus Dorsi
Gluteus Medius
Tensor Fascia Lata
Quadratus Lumborum
Quadriceps
Piriformis
Sartorius
Gracilis
Soleus
Diaphragm
Teres Minor
Infraspinatus
Teres Major
(provisional)
Upper Trapezius
Adductors
Neck Flexors
Neck Extensors

Osteopathy

The study of mind, matter and motion

A. T. Still

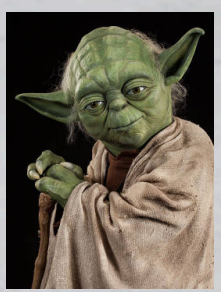
Four Basic Principles of Osteopathic Medicine

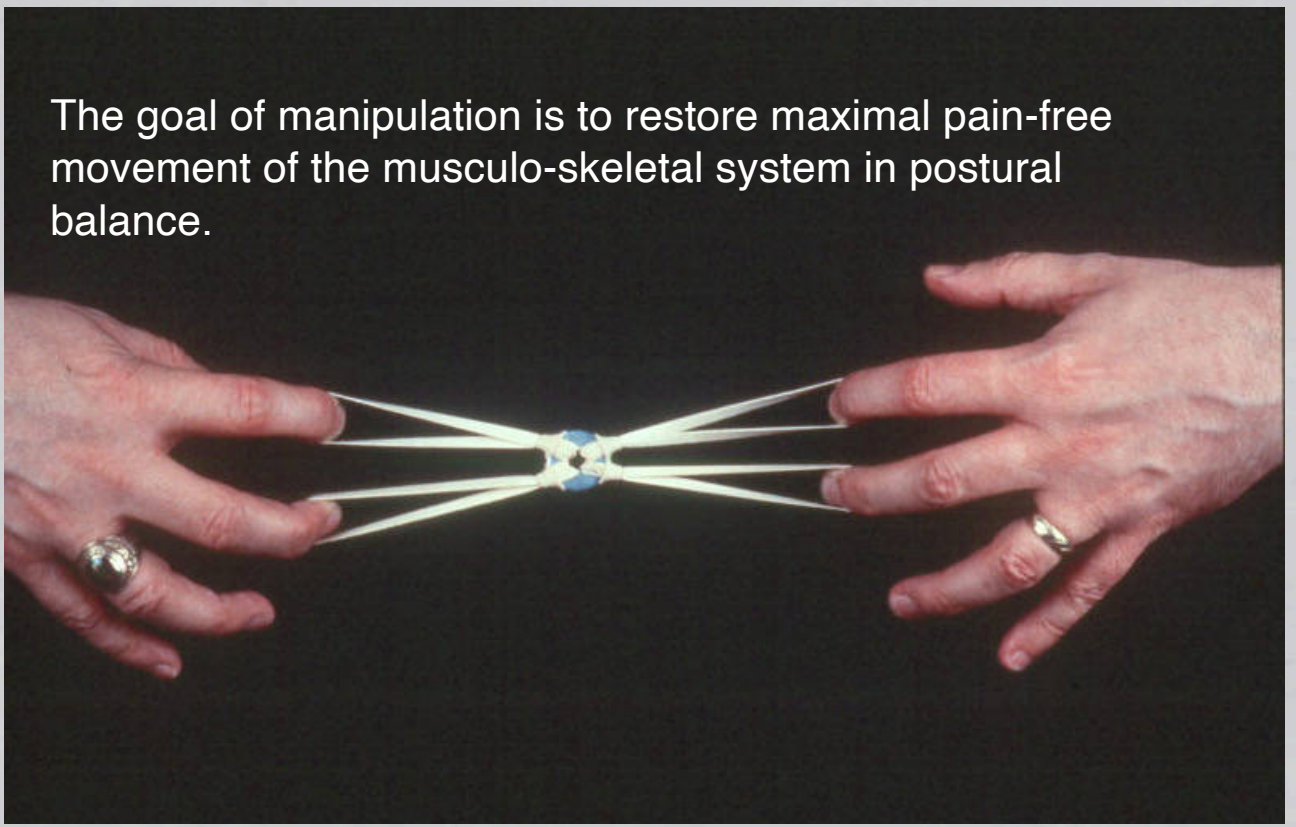
1. The body is a unit; the person is a unit of body, mind, and spirit.

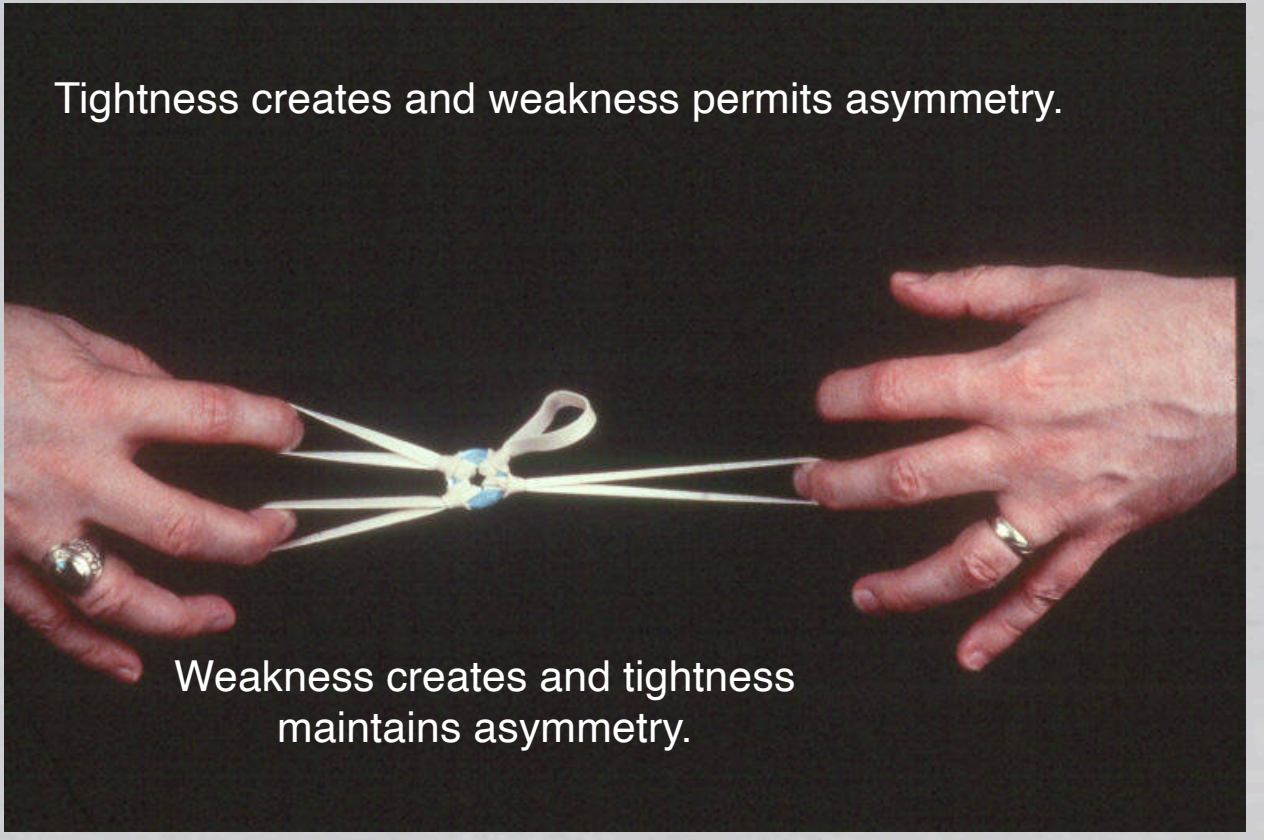
2. The body is capable of self-regulation, self healing, and health maintenance.

3. Structure and function are reciprocally interrelated.

4. Rational treatment is based upon an understanding of the basic principles of body unity, self-regulation, and the interrelationship of structure and function.




The goal of manipulation is to restore maximal pain-free movement of the musculo-skeletal system in postural balance.


Tightness creates and weakness permits asymmetry.
Weakness creates and tightness
maintains asymmetry.

Osteopathic Manipulation

Myofascial Release
Muscle Energy Technique
Strain-Counterstrain
Functional Release
Cranial Osteopathy
High Velocity Technique
Visceral Manipulation
Still Technique
Facilitated Position Release
Balanced Ligamentous Tension
Percussion Hammer
Fascial Distortion Model

Somatic Dysfunction

Impaired or altered function of related components of the somatic (body framework) system: Skeletal, arthrodial, and myofascial structures, and related vascular, lymphatic, and neural elements; the positional and motion aspects of somatic dysfunction are best described using two parameters:

1. **The position of a body part as determined by palpation and referenced to its adjacent defined structure**
2. **The direction in which motion is freer and the directions in which motion is restricted;**

In either instance the Cartesian, orthogonal or Euler coordinates are used as the reference axes of motion.

Monitoring Motions

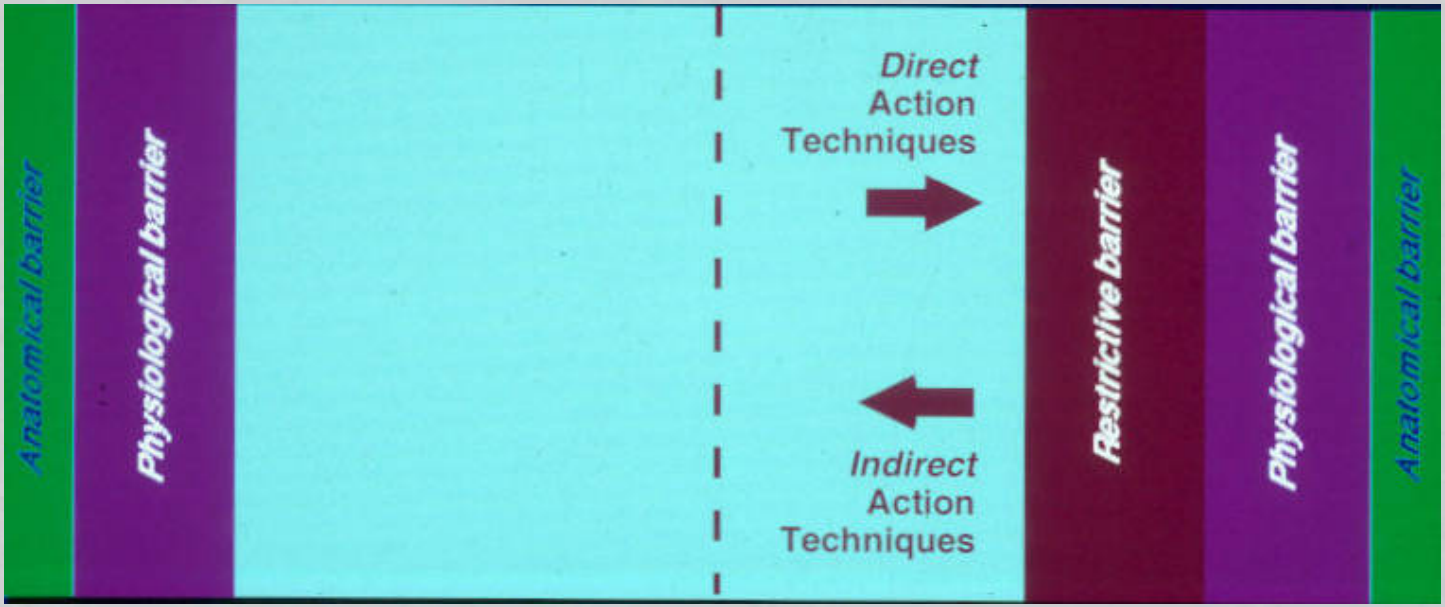
- Flexion/Extension
- Side-Bending
- Rotation
- Anterior/Posterior Translation
- Lateral Translation
- Cephalad/Caudad Translation
  (Distraction/Compaction)
- Inhalation/Exhalation

Goals of Treatment using Osteopathic Manipulation

1. Decrease muscle contraction
1. Increase blood/oxygen supply
1. Increase venous and lymphatic drainage
4. Stimulate hypotonic muscles



Concept of Barriers



Neutral position

Barrier Concept: Define your problems before you can hope to fix them









Biomechanical: Employed to restore local Arthrodial motion loss



Respiratory-Circulatory:

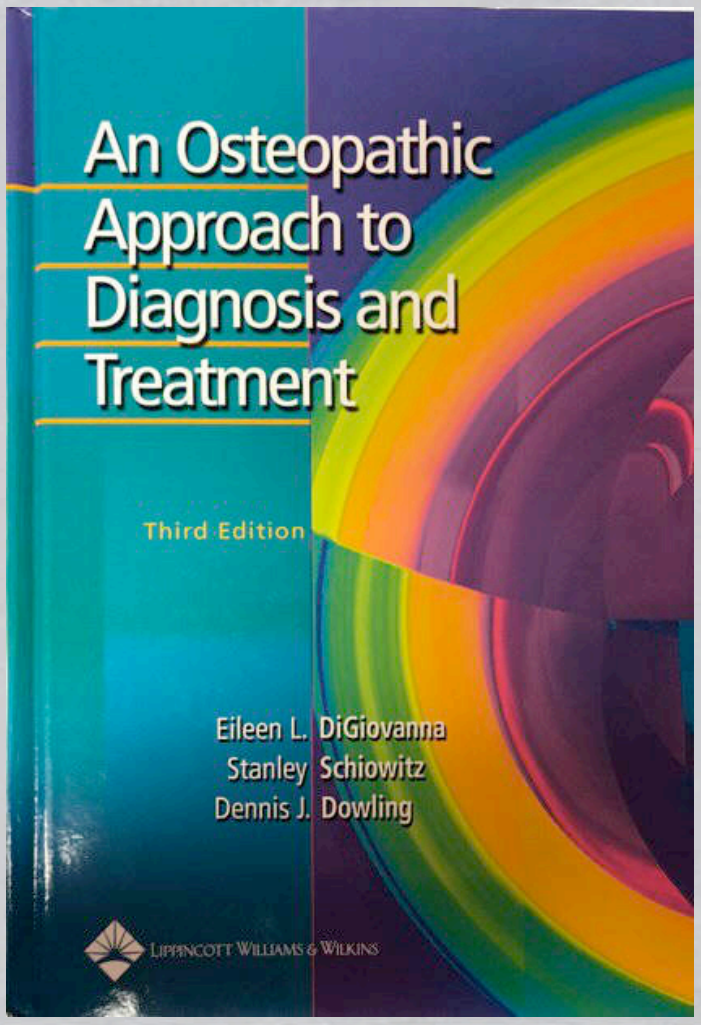
- Change in PEFR in COPD and Asthma patients after thoracic HVLA
- Gordon Zink

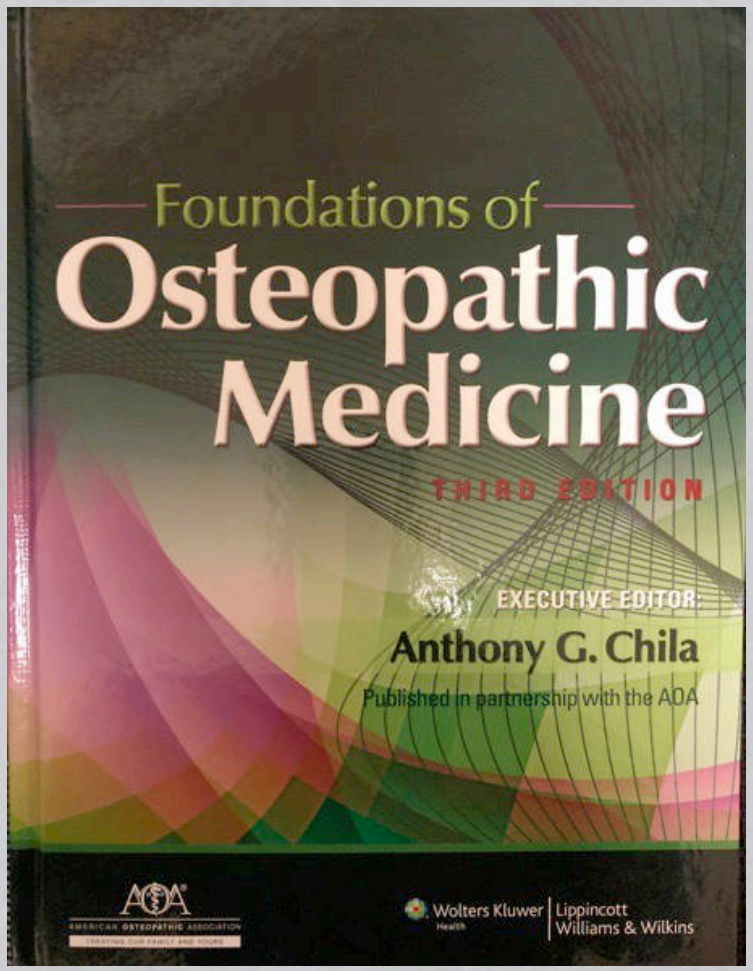


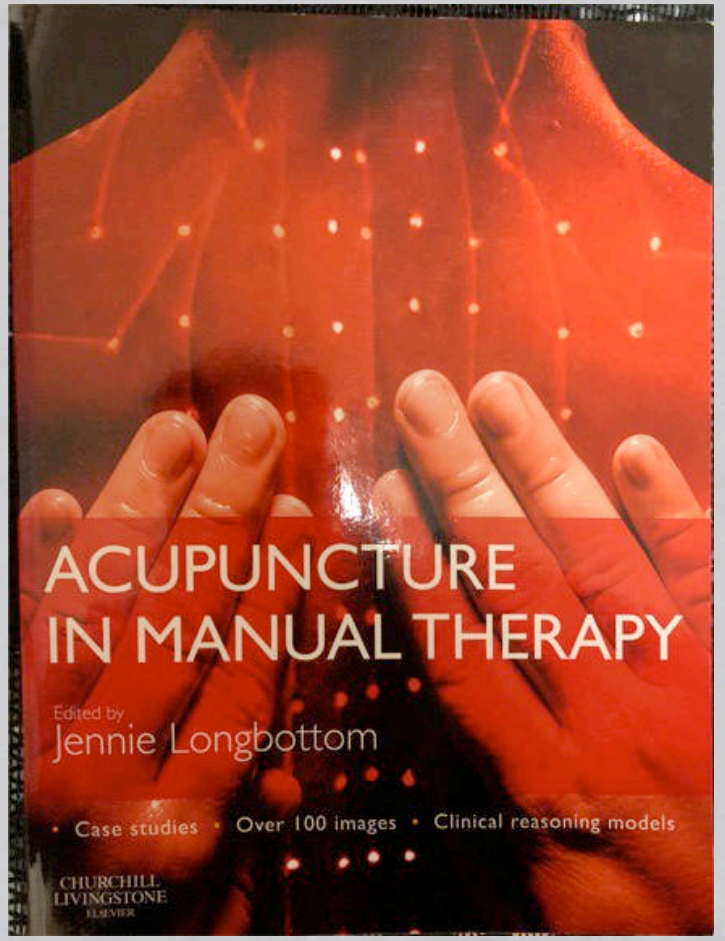
Metabolic-Energetic:

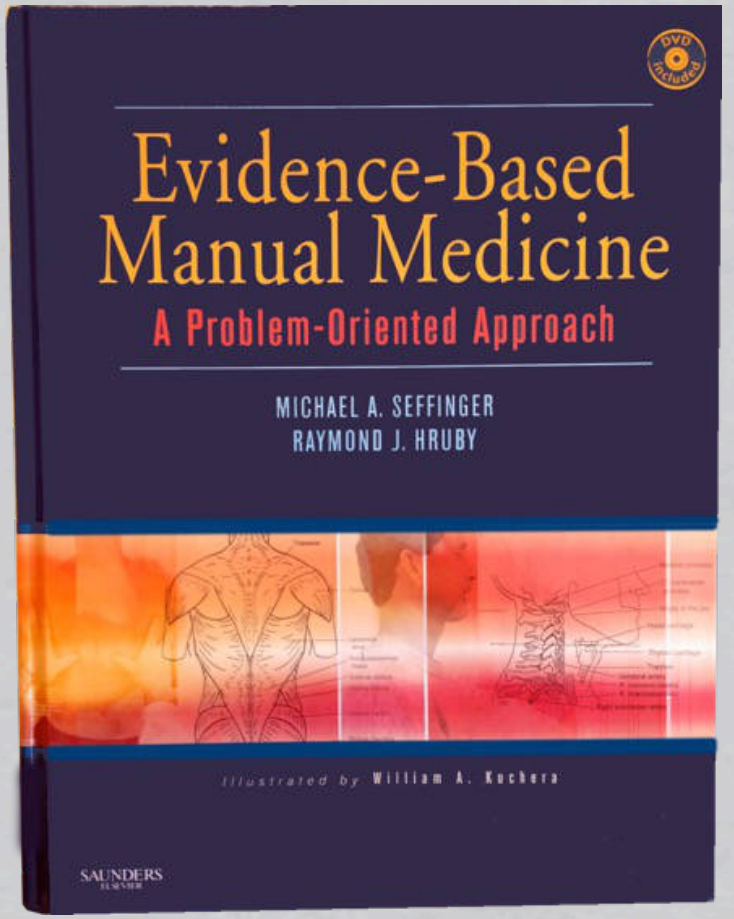
- Trickle down from improved neuro, resp, circulatory

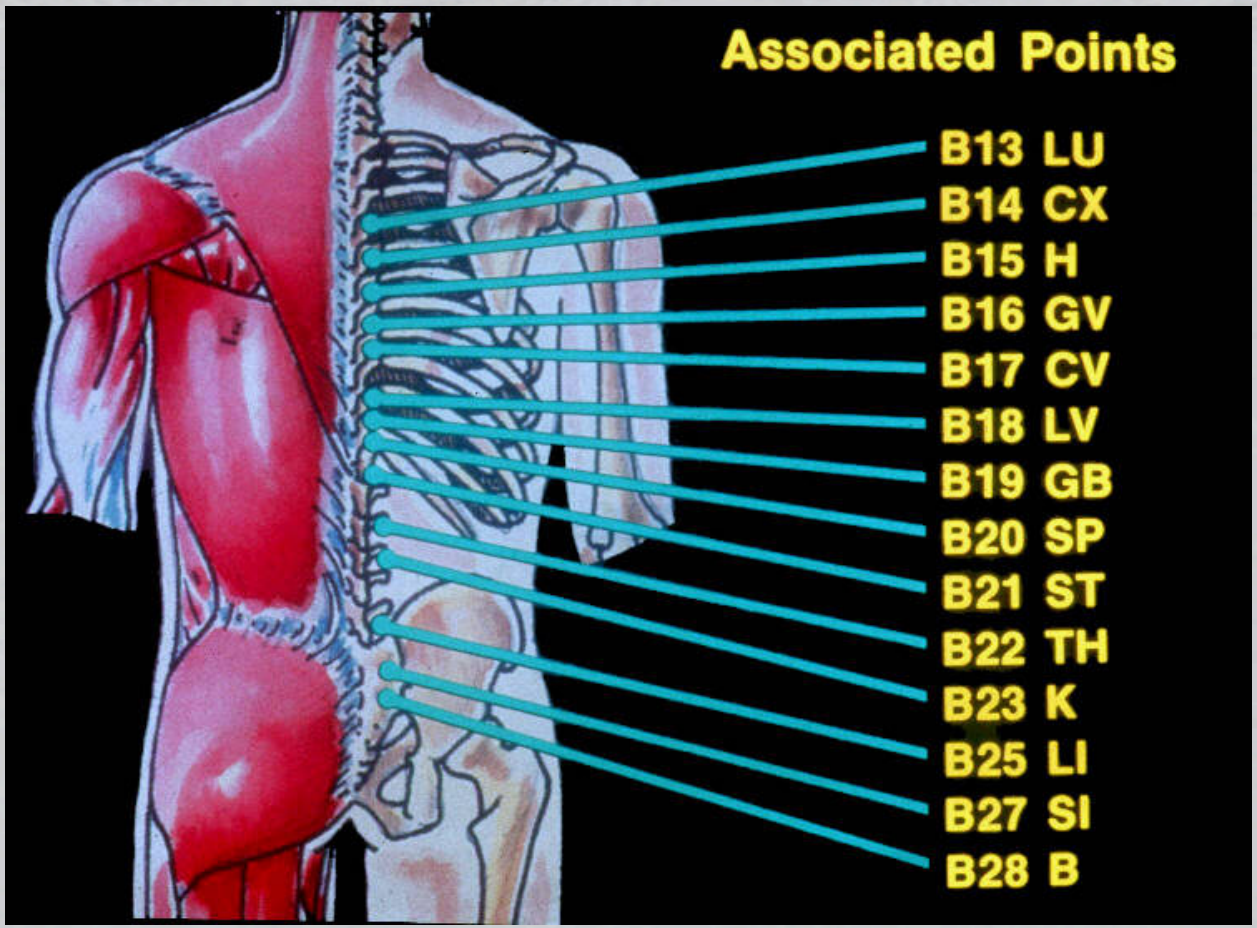



An Osteopathic Approach to Diagnosis and Treatment
Third Edition
Eileen L. DiGiovanna
Stanley Schiowitz
Dennis J. Dowling
Lippincott Williams & Wilkins


Foundations of
Osteopathic
Medicine
THIRD EDITION
EXECUTIVE EDITOR:
Anthony G. Chila
Published in partnership with the AOA
AOA
AMERICAN OSTEOPATHIC ASSOCIATION
Wolters Kluwer Health
Lippincott
Williams & Wilkins


ACUPUNCTURE
IN MANUAL THERAPY
Edited by
Jennie Longbottom
• Case studies • Over 100 images • Clinical reasoning models
CHURCHILL
LIVINGSTONE
ELSEVIER


DVD included
Evidence-Based Manual Medicine
A Problem-Oriented Approach
MICHAEL A. SEFFINGER
RAYMOND J. HRUBY
Illustrated by William A. Kuchera
SAUNDERS


Associated Points
B13 LU
B14 CX
B15 H
B16 GV
B17 CV
B18 LV
B19 GB
B20 SP
B21 ST
B22 TH
B23 K
B25 LI
B27 SI
B28 B



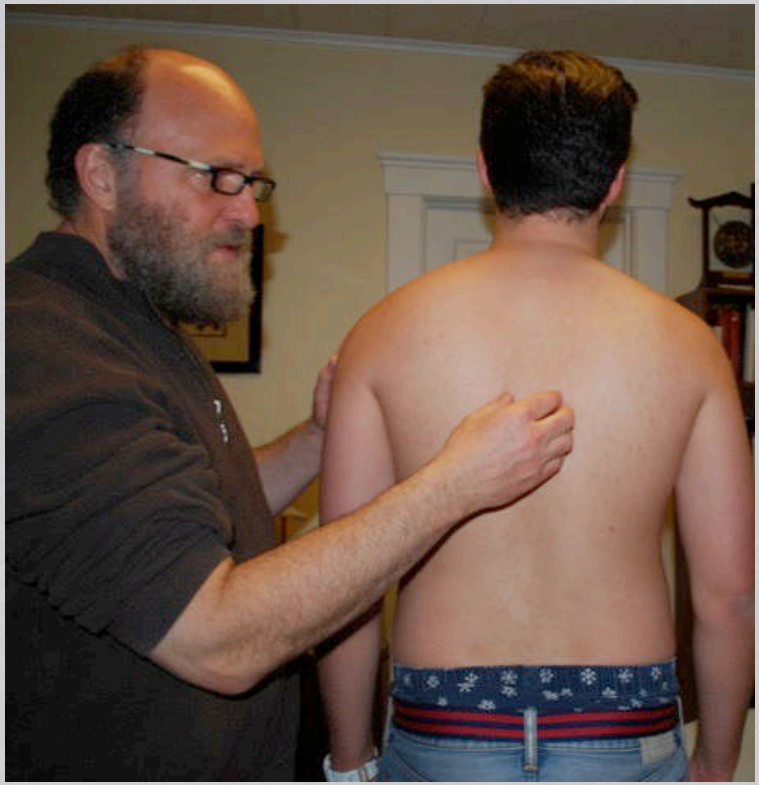
GENERAL LISTENING:

From Barral
Visceral Manipulation



PERCUSSION OF PARAVERTEBRAL TISSUES:

From Johnston Functional Release



SHEARING GENTLY FOR SKIN DRAG AND VALLEYS



SIDEBENDING FOR BARRIER SENSE:
RESISTANCE VS COMPLIANCE



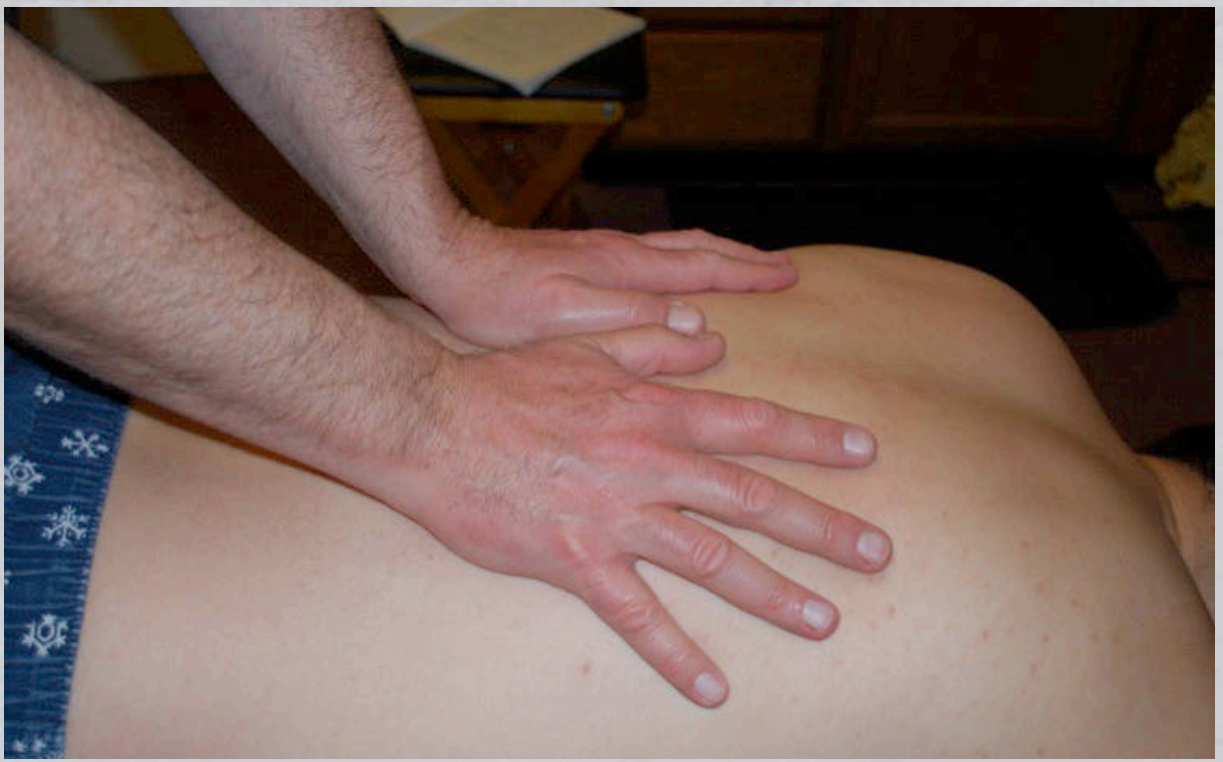
ROCKING SPINOUS PROCESSES:
SCREEN TO FIND KEY RESTRICTIONS



HOMING IN ON THE PRECISE VERTEBRAL LEVEL OF RESTRICTION



MYOFASCIAL RELEASE:
DIRECT OR INDIRECT INTENTION



MYOFASCIAL RELEASE:
DIRECT OR INDIRECT INTENTION



MYOFASCIAL RELEASE:
LONG-AXIS DOWNWARD DOG

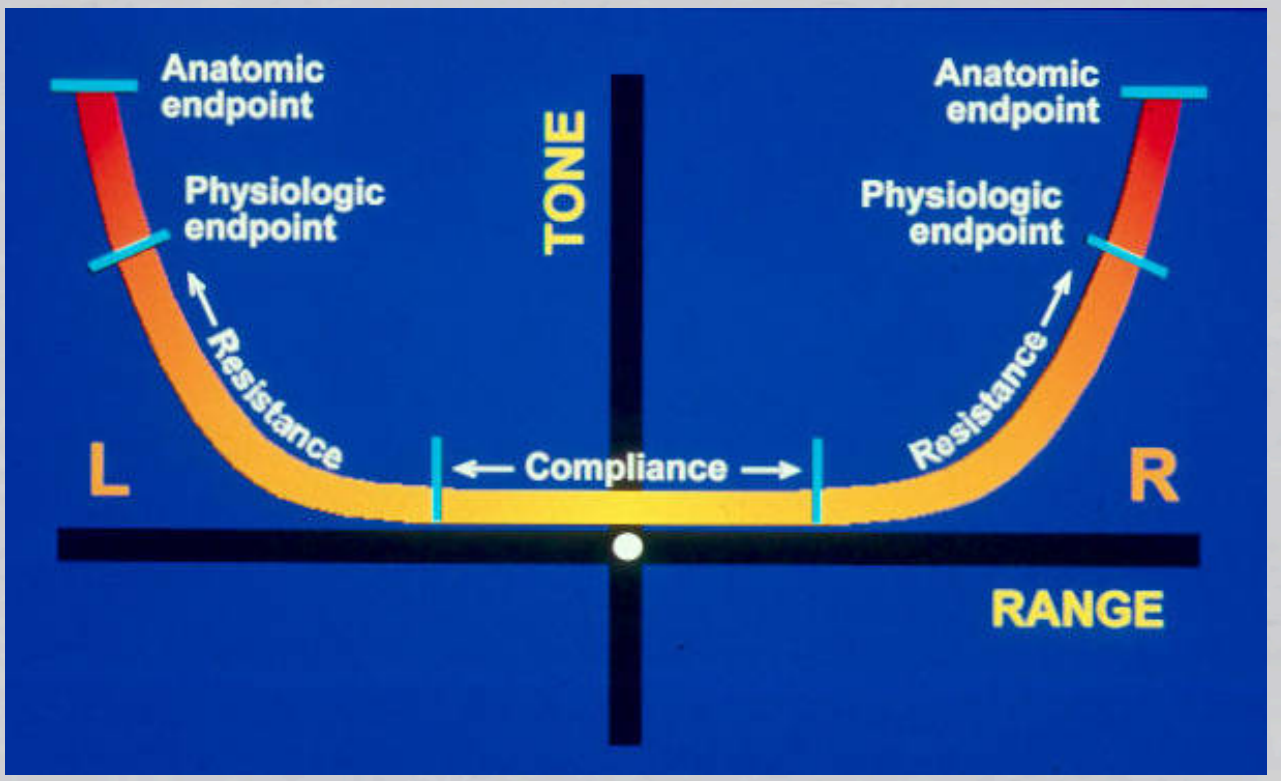
Physical Evaluation

- Listen
- Observe
- Touch
- Tenderness
- Asymmetry
- Restriction of Motion
- Tissue Change

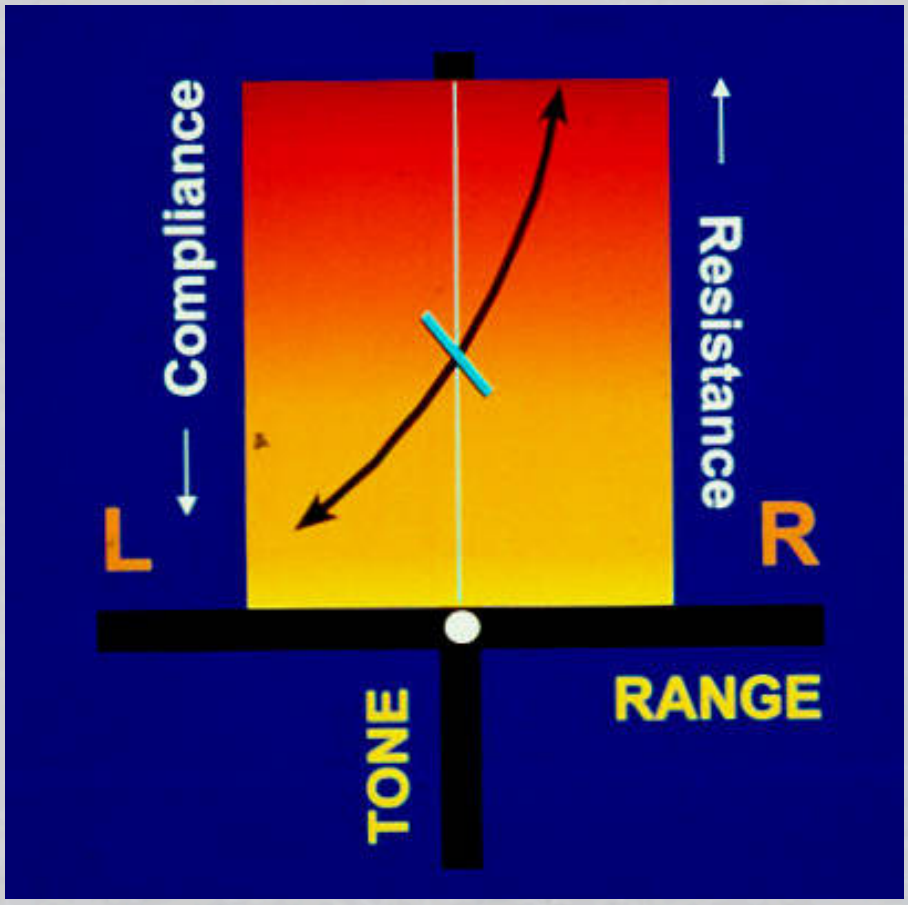
Monitoring Motions

- Flexion/Extension
- Side-Bending
- Rotation
- Anterior/Posterior Translation
- Lateral Translation
- Cephalad/Caudad Translation
  (Distraction/Compaction)
- Inhalation/Exhalation

Symmetric Response to Motion



Asymmetric Response to Motion



Diagnostic Approach

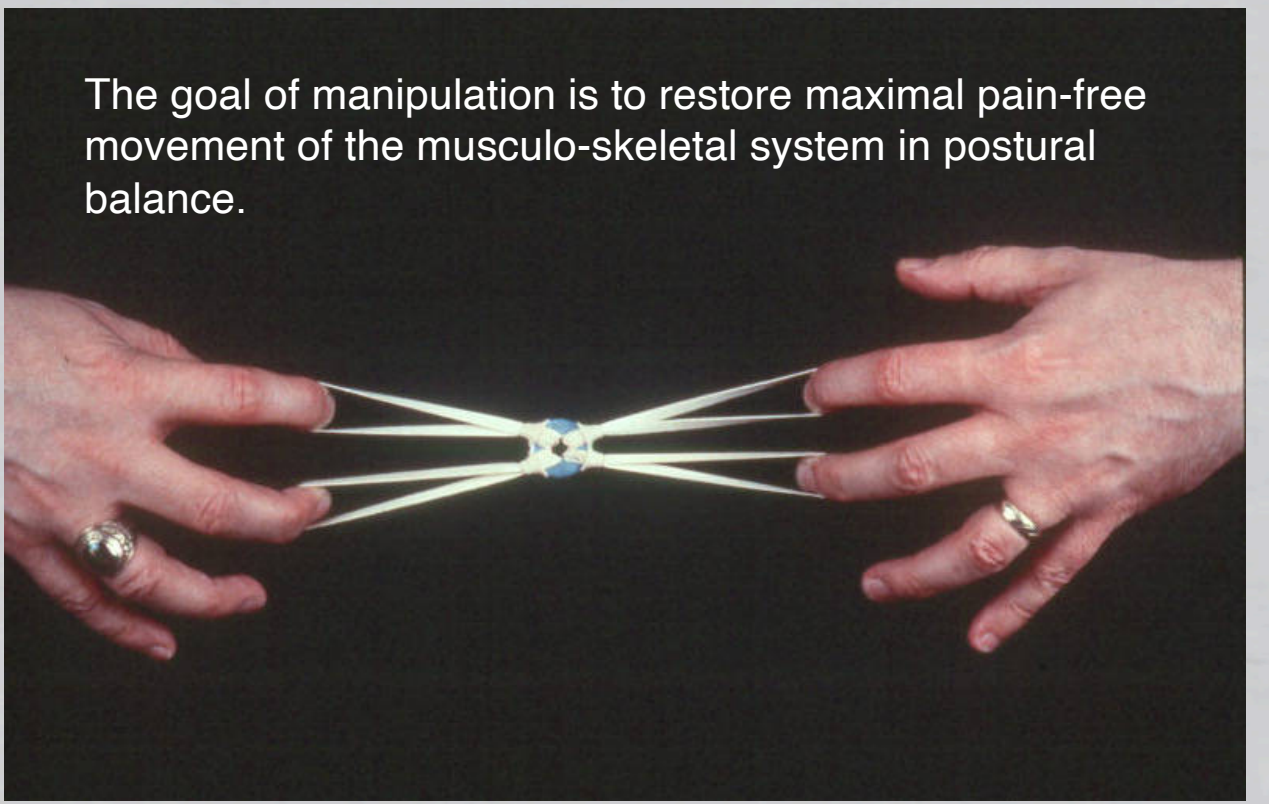
Screen	Level 1	General impression	Is there a problem?
Scan	Level 2	Location	Where is the problem?
Segmental definition	Level 3*	Diagnostic characteristics	What is the problem?

*Positive Findings

Osteopathic Manipulation

Myofascial Release
Muscle Energy Technique
Strain-Counterstrain
Functional Release
Cranial Osteopathy
High Velocity Technique
Visceral Manipulation
Still Technique
Facilitated Position Release
Balanced Ligamentous Tension
Percussion Hammer
Fascial Distortion Model

The goal of manipulation is to restore maximal pain-free movement of the musculo-skeletal system in postural balance.



WORKSHOP EXERCISES FOR MANUAL SKILLS DEVELOPMENT:

- GENERAL LISTENING (BARRAL)
- PERCUSSION-SHEARING (JOHNSTON)
- MOTION TESTING WITH REPEATED SIDEBENDING OR ROTATION
- TISSUE TEXTURE SCREENING (SKIN DRAG, TURGOR, SUDOMOTOR)
- THERMAL ENERGY SCANNING OF POINTS AND CHANNELS (BENSKY)
- THERAPY LOCALIZATION WITH MUSCLE TESTING:
  (PULSE, ALARM OR TONIFICATION POINTS)
  (GOODHEART/APPLIED KINESIOLOGY)

MANUAL MEDICINE TECHNIQUES THAT TREAT CHANNEL RESTRICTIONS

- CONCEPTION VESSEL: **CV-17** COUNTERSTRAIN
- GOVERNING VESSEL: **GV-1** COUNTERSTRAIN, **GV-20** CRANIAL
- LUNG: **LU- 1&2** COUNTERSTRAIN, **LU-7-9** MYOFASCIAL RELEASE
- LARGE INTESTINE: **LI-4** UNWIND THUMB, **LI-11** COUNTERSTRAIN/MFR
- STOMACH: **ST-41** MUSCLE ENERGY TECHNIQUE OR THRUST TECHNIQUE
- SPLEEN: **SP-2,3,4** MYOFASCIAL RELEASE OR MUSCLE ENERGY TECHNIQUE
- HEART: **HT-1** ACTIVATED RELEASE, **HT-3** COUNTERSTRAIN OR THRUST

MANUAL MEDICINE TECHNIQUES THAT TREAT CHANNEL RESTRICTIONS

- SMALL INTESTINE: **SI-11,13,14** COUNTERSTRAIN , **SI-19** TMJ RELEASES
- BLADDER: **ANY SPINAL LEVEL** (e.g. **BL-23**) MET/ COUNTERSTRAIN
- KIDNEY: **KI-10** COUNTERSTRAIN, **KI-27** MET
- TRIPLE ENERGIZER: **TE-10, 11, 12** DEEP MYOFASCIAL RELEASE
- GALL BLADDER: **GB-34,40** MET TO FIBULA, **GB-20** MET OR COUNTERSTRAIN, **GB-21** COUNTERSTRAIN OR MYOFASCIAL RELEASE
- LIVER: **LR-2,3** MFR OF TOE, **LR-4** MFR OF ANKLE MORTISE, LR-14 VISCERAL

WORKSHOP EXER
DEVELOPMENT:

- GENERAL LISTENING (BA
- PERCUSSION-SHEARING (
- MOTION TESTING WITH RE
- TISSUE TEXTURE SCREEN
- THERMAL ENERGY SCANN
- THERAPY LOCALIZATION V
  (PULSE, ALARM OR TONIF
  (GOODHEART/APPLIED KI
- **MUSCLE-MERIDIAN RELAT**
- SUPRASPINATUS=CONCEP
- TERES MAJOR=GOVERNIN
- DELTOID=LUNG
- TENSOR FASCIA LATA= LA
- PECTORALIS MAJOR CLAV
- LATISSIMUS DORSI=PANC
- SUBSCAPULARIS=HEART
- 14 MUSCLE-MERIDIAN DAN
- MUSCLE WEAKNESS AS AN
- LOCATION OF SPINAL SEG
  MERIDIAN PROBLEM (SHU
- **HELMS 3 TYPES: NURTUR**
- NURTURE=LATISSIMUS DO
- VISION= PECTORALIS MAJ
- WILL=PSOAS/SUBSCAPULA

MANUAL MEDIC
RESTRICTIONS

CONCEPTION VES

GOVERNING VESS

LUNG: **LU- 1&2** C

LARGE INTESTINE

STOMACH: **ST-41**

SPLEEN: **SP-2,3,**
TECHNIQUE

HEART: **HT-1** AC

SMALL INTESTINE

BLADDER: **ANY**

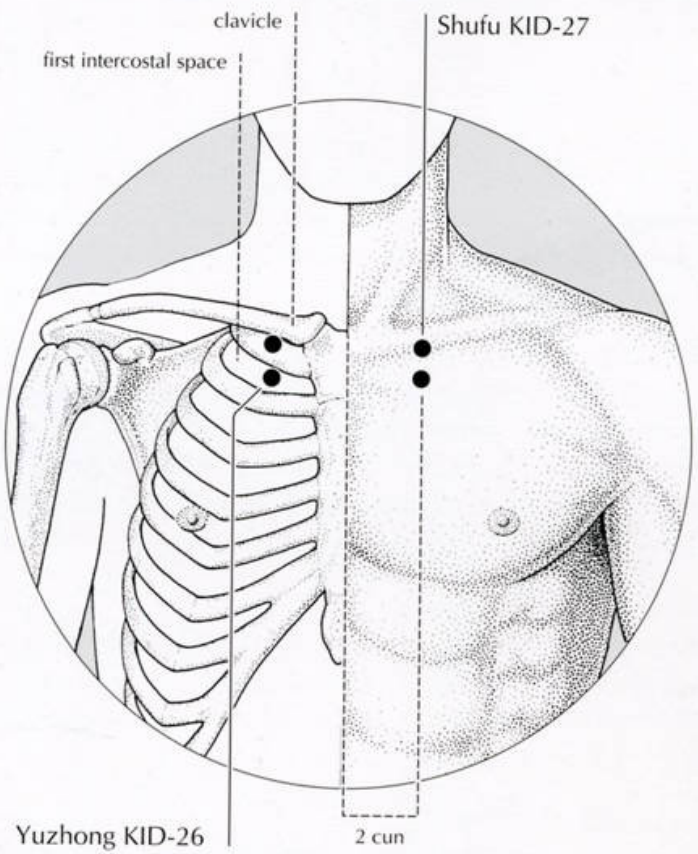
KIDNEY: **KI-10** C

TRIPLE ENERGIZE

GALL BLADDER:
COUNTERSTRAIN,

LIVER: **LR-2,3** MF
VISCERAL

YUZHONG KID-26, SHUFU KID-27







Screening Test for S-C Joint Restriction (Patient Shrugs)

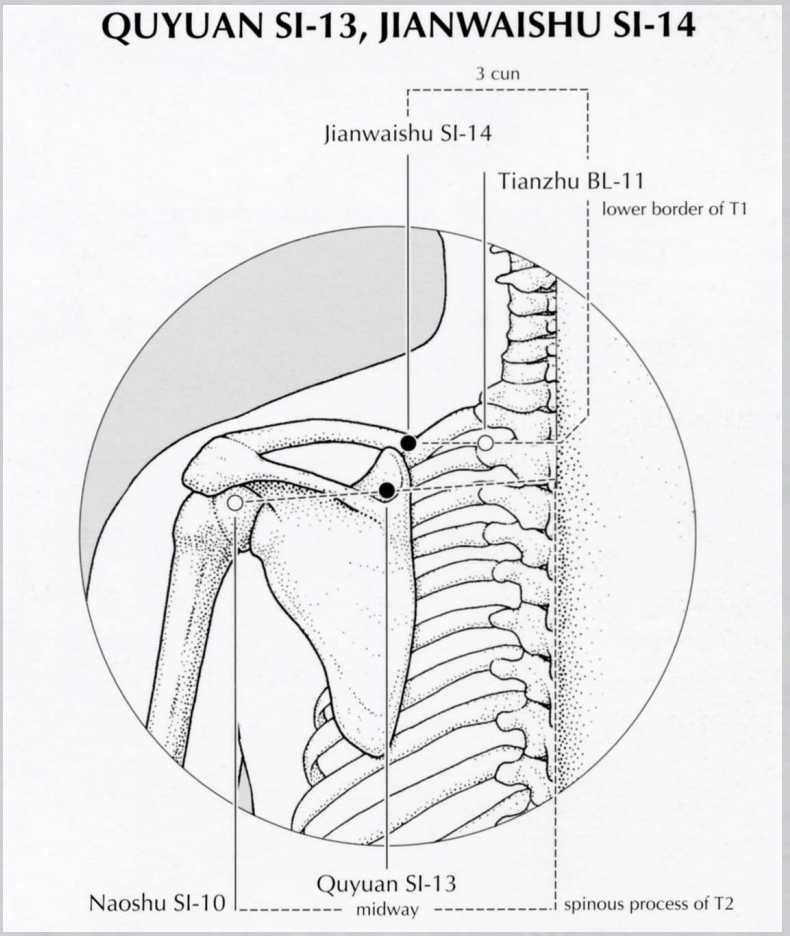


MET Tx For S-C Joint Dx: Restriction of Inferior Glide



MET Tx for Restricted Posterior Glide of Proximal Clavicle

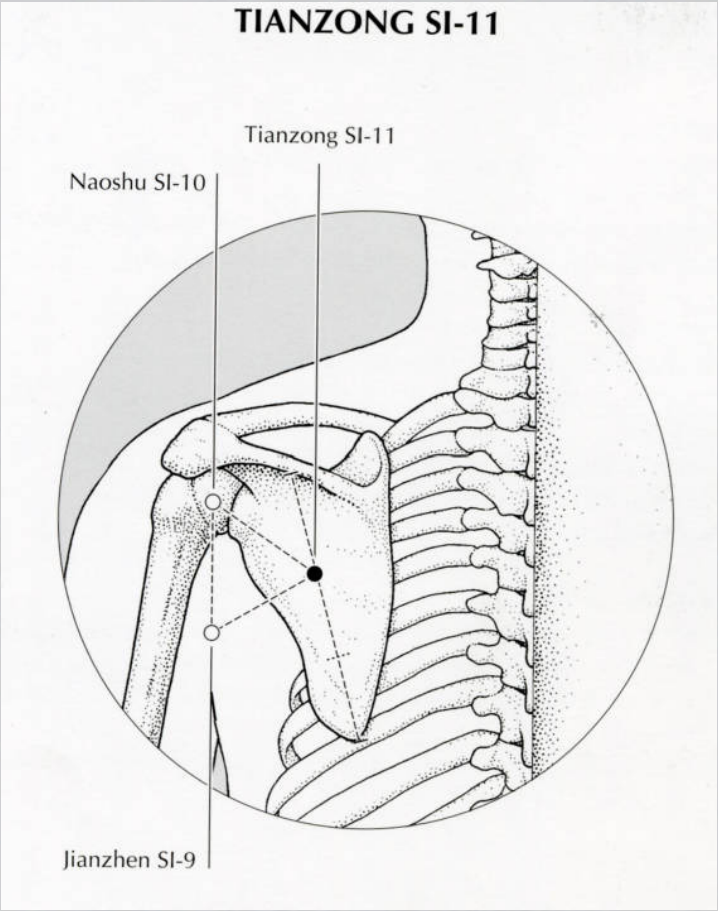
QUYUAN SI-13, JIANWAISHU SI-14



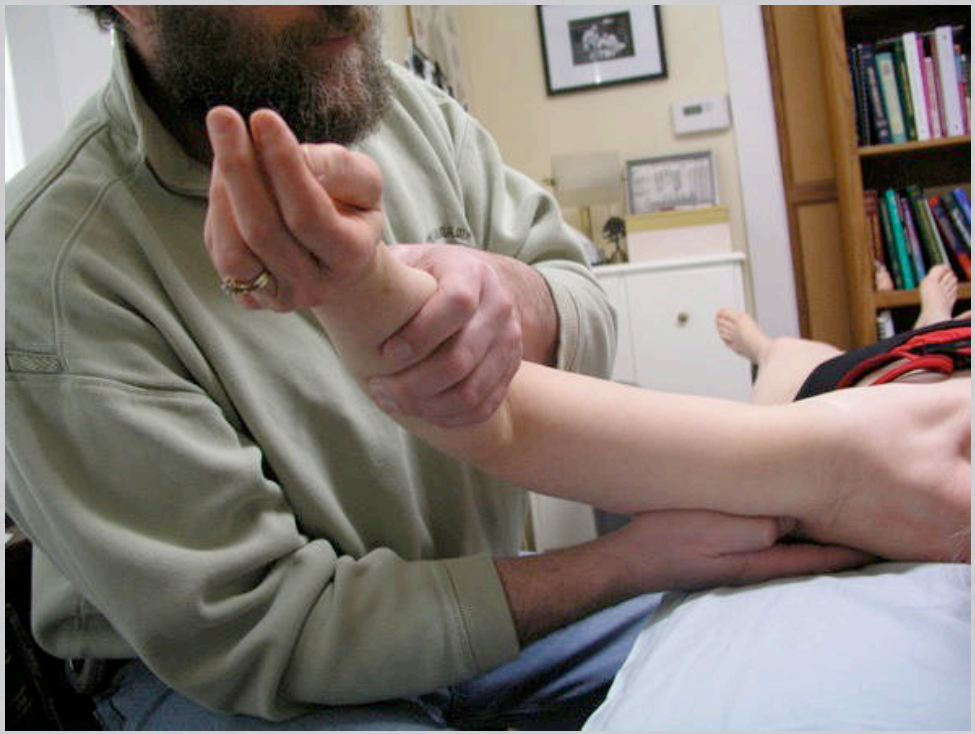


Counterstrain Tx:
Traction the arm caudad

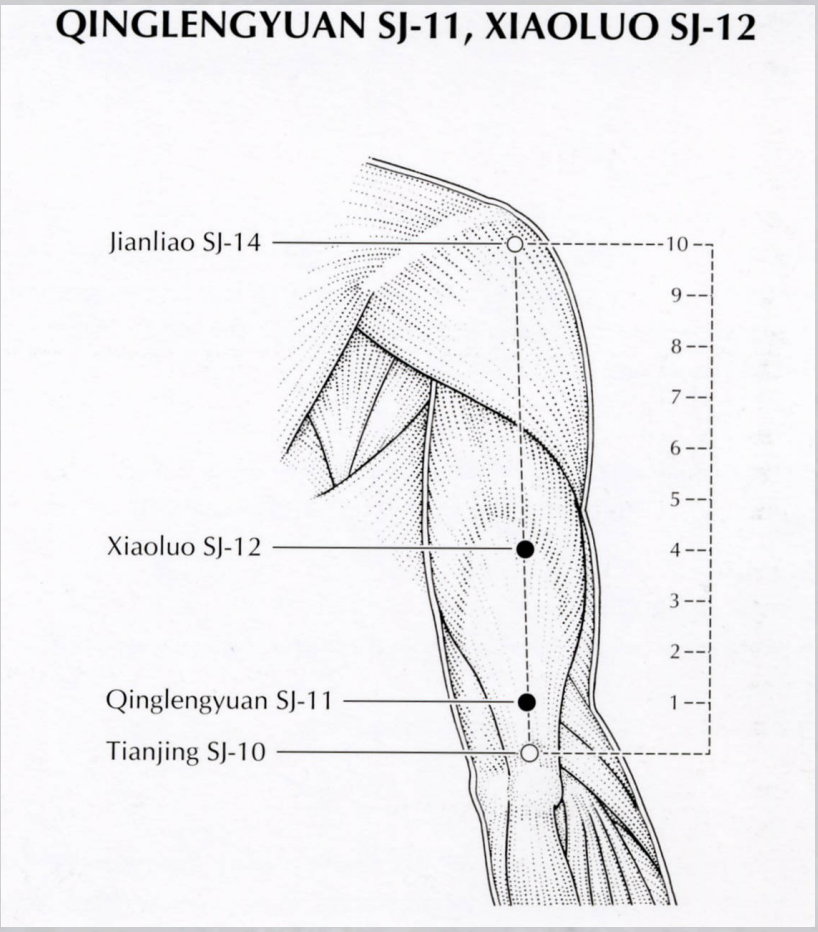
TIANZONG SI-11

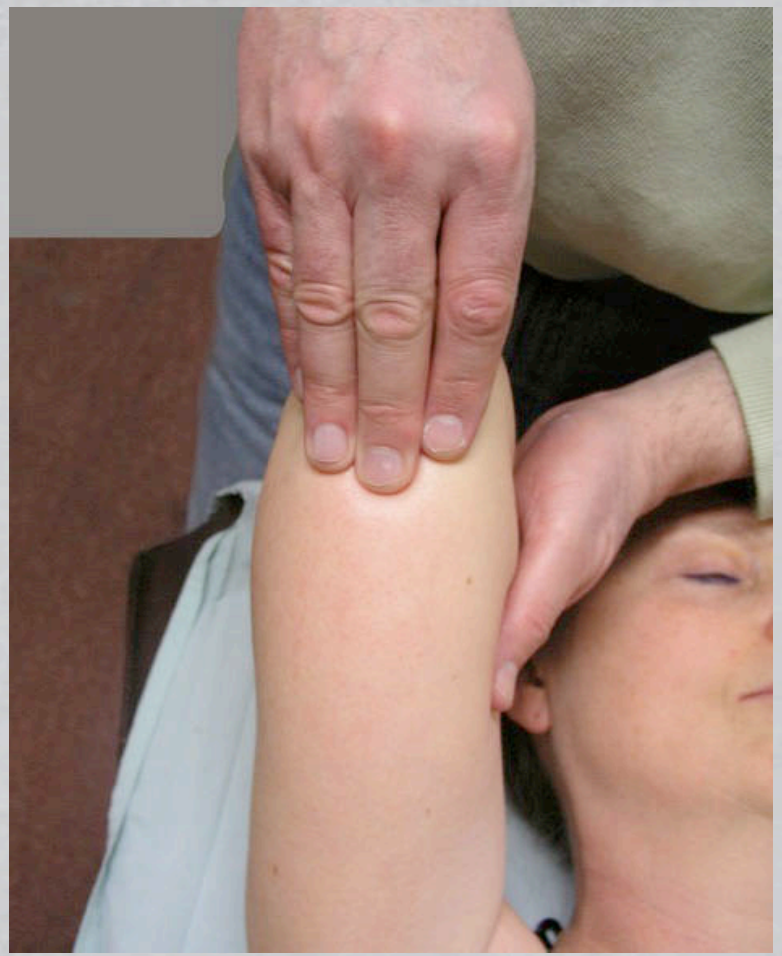


Counterstrain Tx: Infraspinatus tenderpoint



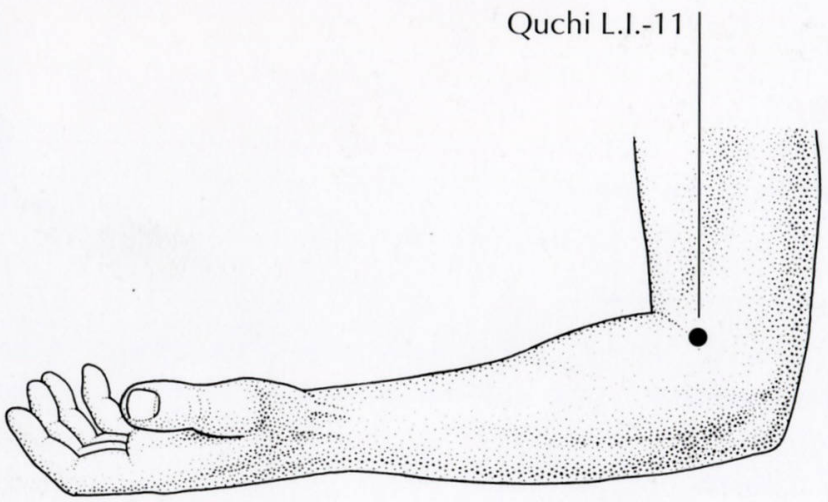
QINGLENGYUAN SJ-11, XIAOLUO SJ-12





Direct Myofascial release to Triceps Fascia

QUCHI L.I.-11



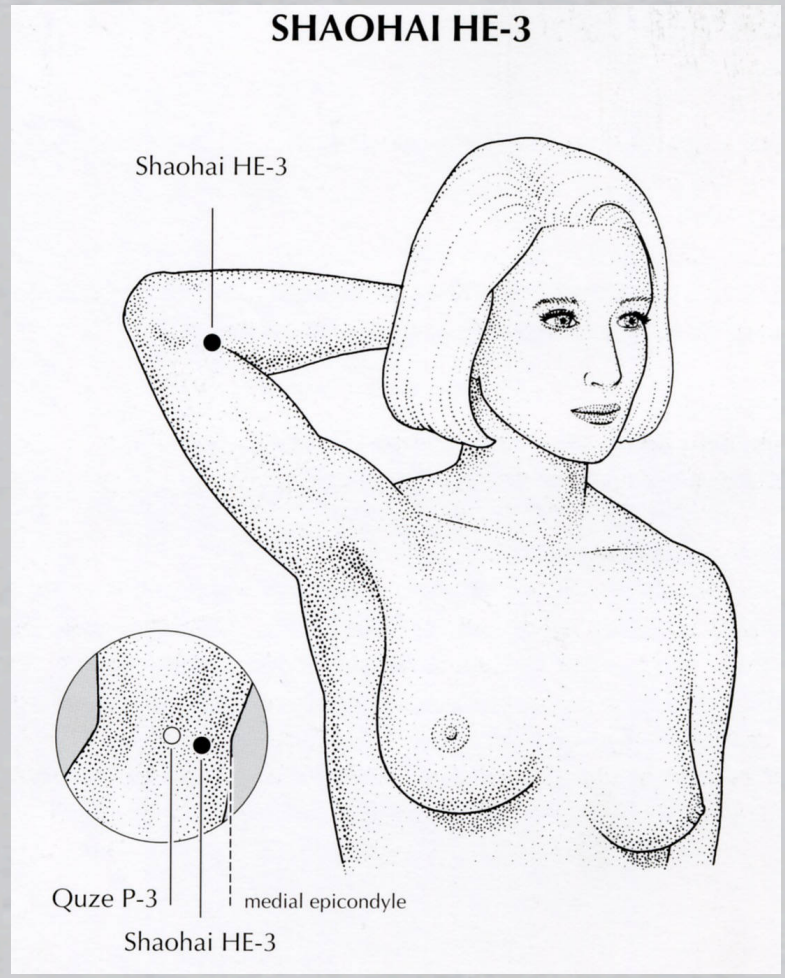


Counterstrain Tx: Radial Head (Tennis Elbow)

XIAOHAI SI-8



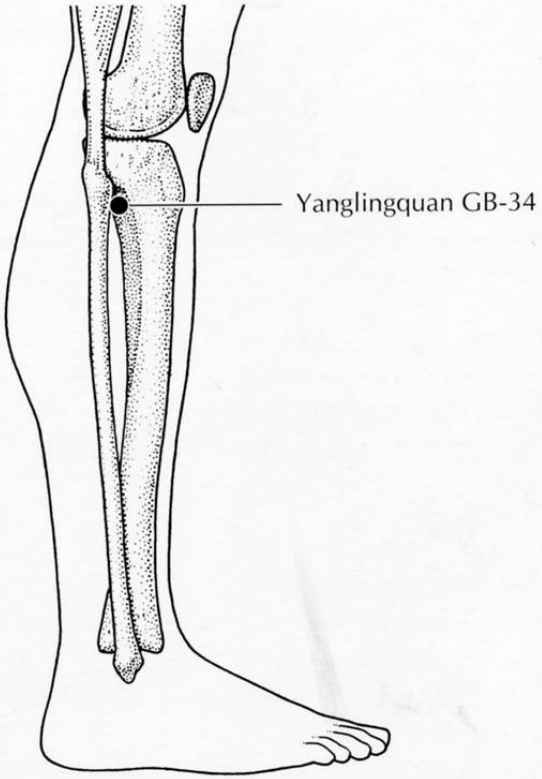
SHAOHAI HE-3





Counterstrain Tx: Medial Epicondyle Area

YANGLINGQUAN GB-34



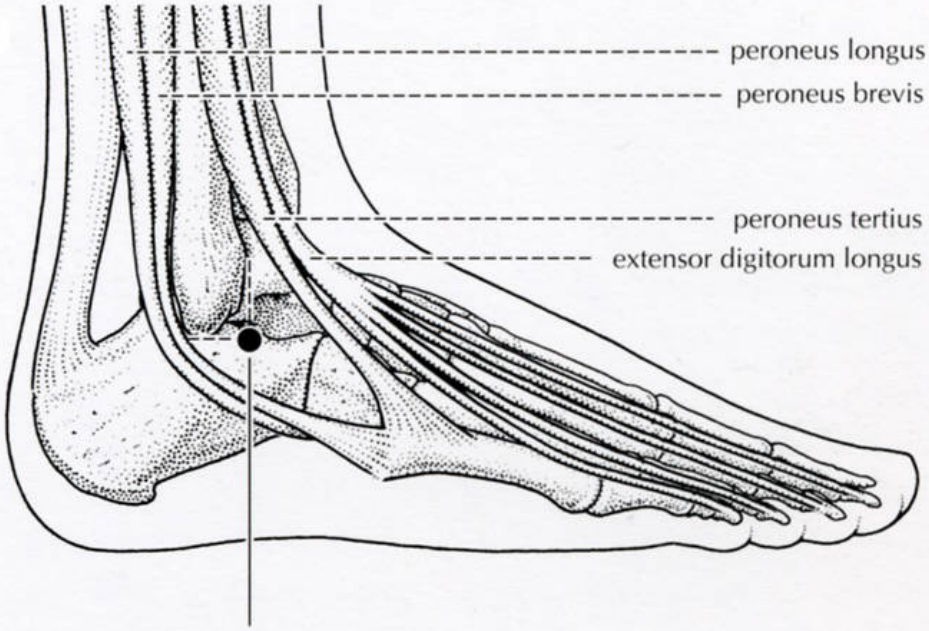


Muscle Energy Treatment: Posterior Fibular Head

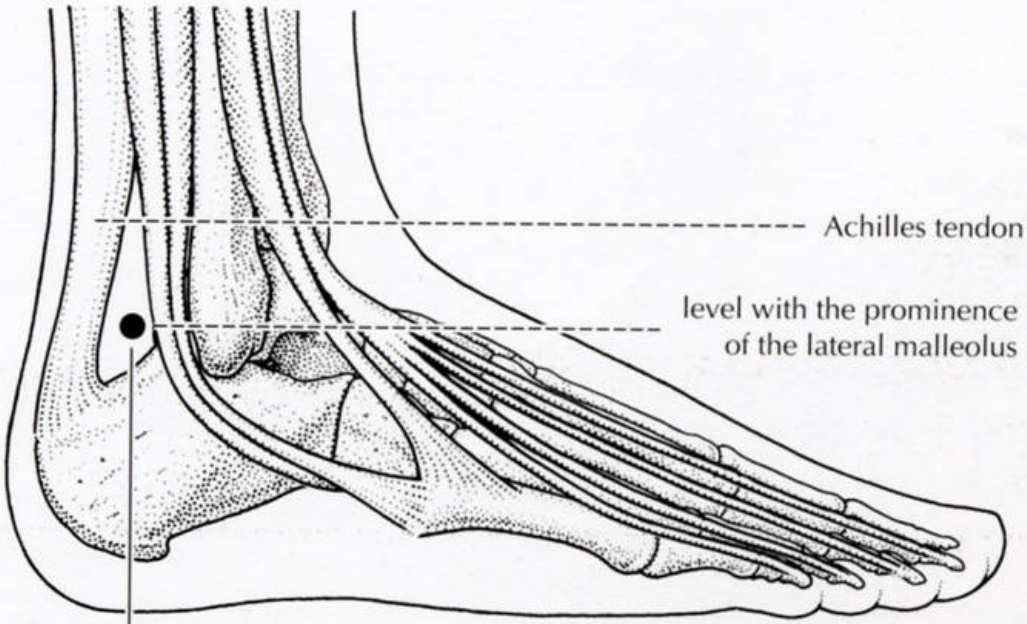


Muscle Energy Treatment: Anterior Fibular Head

QIUXU GB-40


peroneus longus
peroneus brevis
peroneus tertius
extensor digitorum longus
Qiuxu GB-40

KUNLUN BL-60

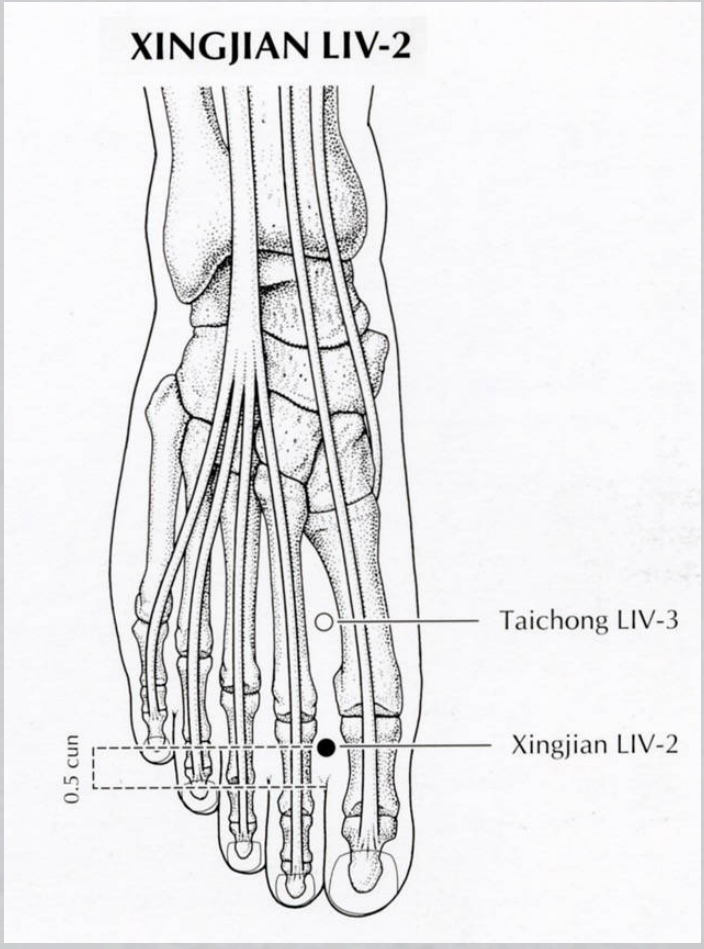

Achilles tendon
level with the prominence
of the lateral malleolus
Kunlun BL-60

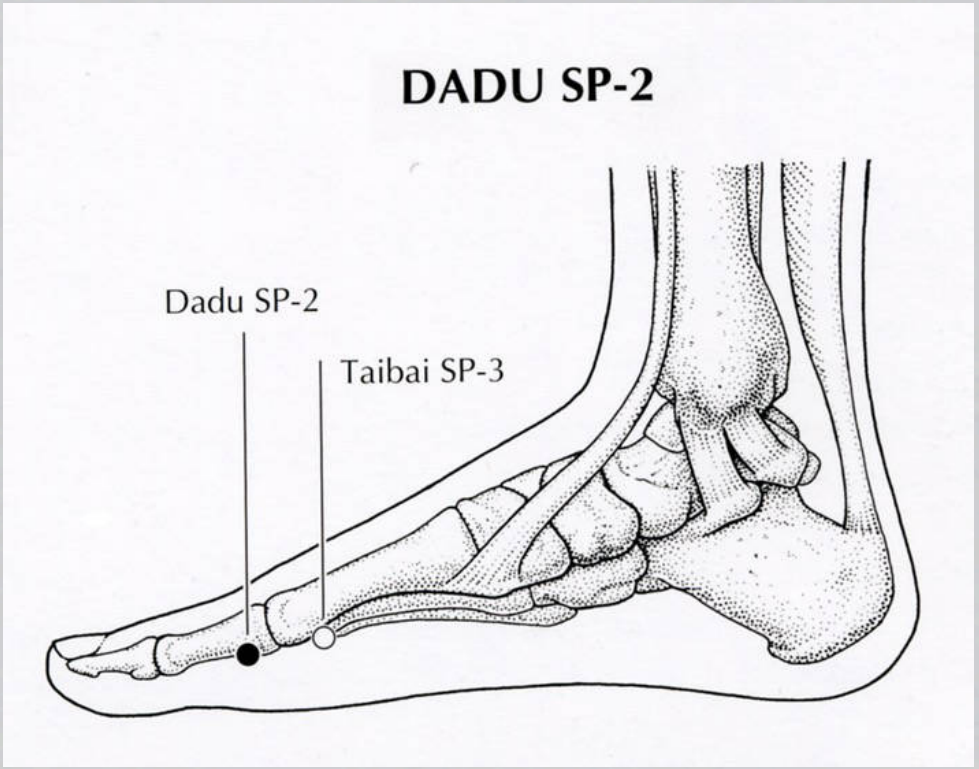


Muscle Energy Treatment: Distal Fibula (Pump Ankle)

Counterstrain Tx: Ankle Sprain



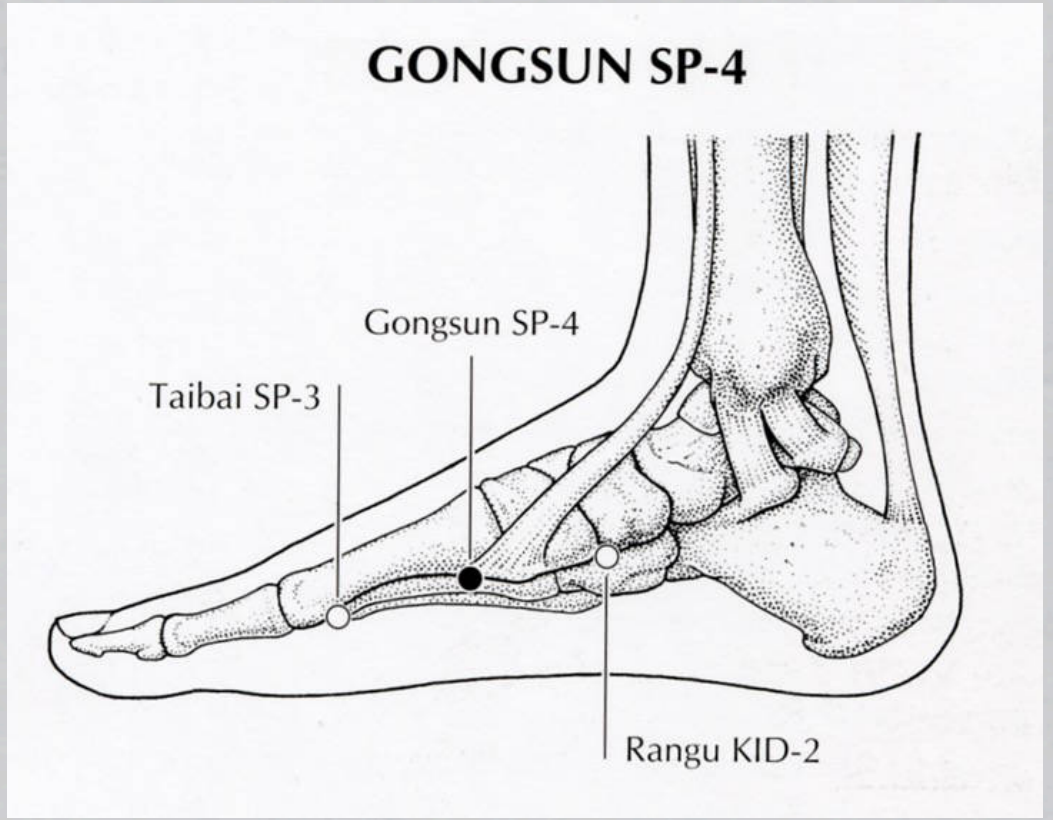

XINGJIAN LIV-2
Taichong LIV-3
Xingjian LIV-2
0.5 cun


DADU SP-2
Dadu SP-2
Taibai SP-3



Myofascial Release of Great Toe

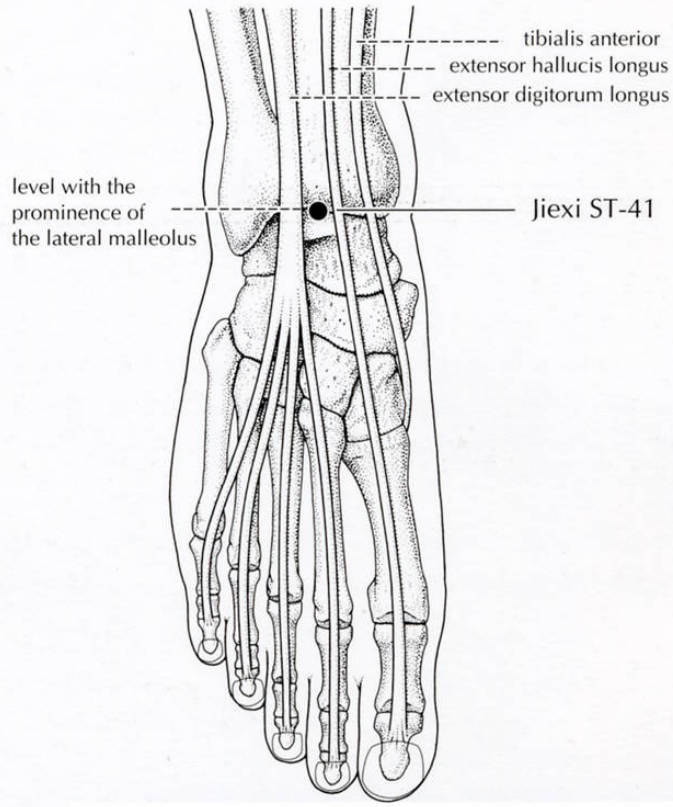
GONGSUN SP-4





Myofascial Release of Proximal Metatarsals (Sp-4)

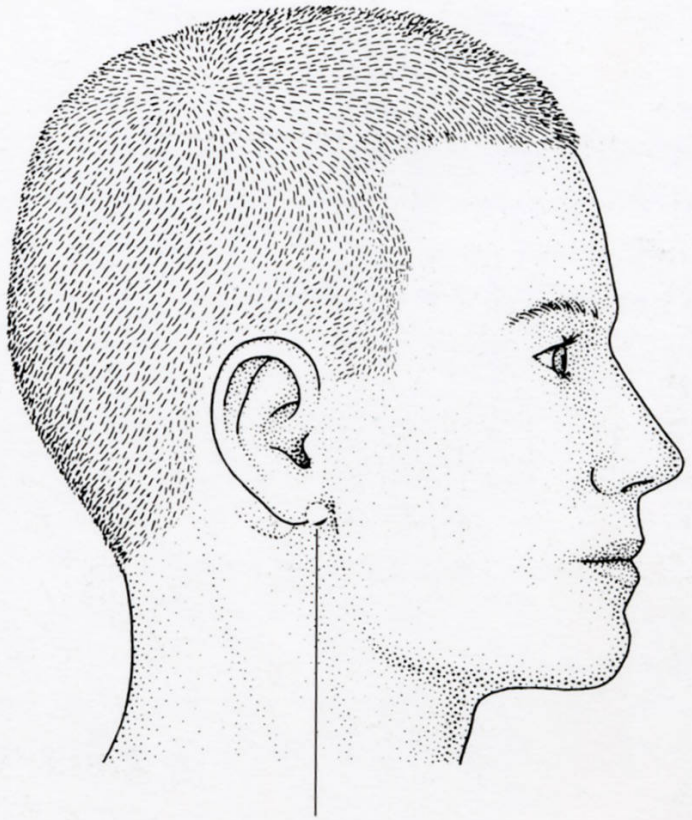
JIEXI ST-41


tibialis anterior
extensor hallucis longus
extensor digitorum longus
level with the prominence of the lateral malleolus
Jiexi ST-41



Myofascial Release of Ankle Mortise (seated)

YIFENG SJ-17



Yifeng SJ-17 (behind earlobe)

AC1

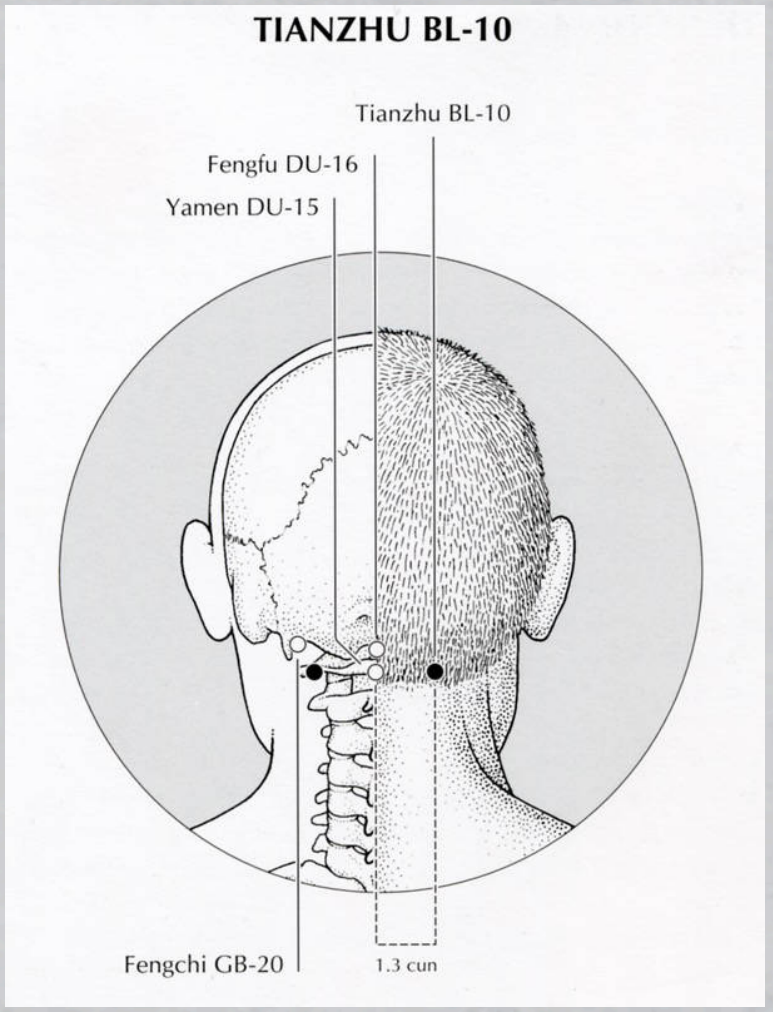


Approach TP posteriorly.

Treatment:
Rotate away markedly.
Side bend away slightly.
Flexion/extension minimal.



TIANZHU BL-10



Posterior C2

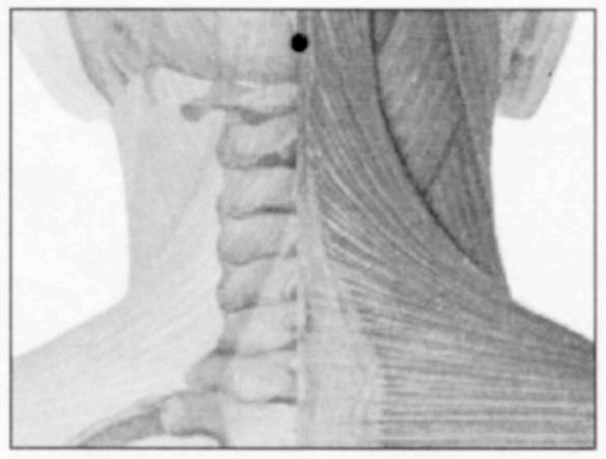
Tender point: Superior surface of C2 spinous or in muscle mass at that level

Tx: Extend occiput and C1 on a neutral C-spine



PC1 Inion

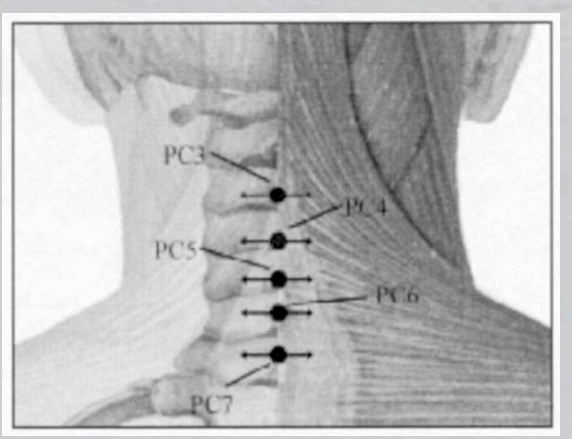
Treatment:
Flexion to barrier.
Sidebend slightly toward.
Rotate slightly away.





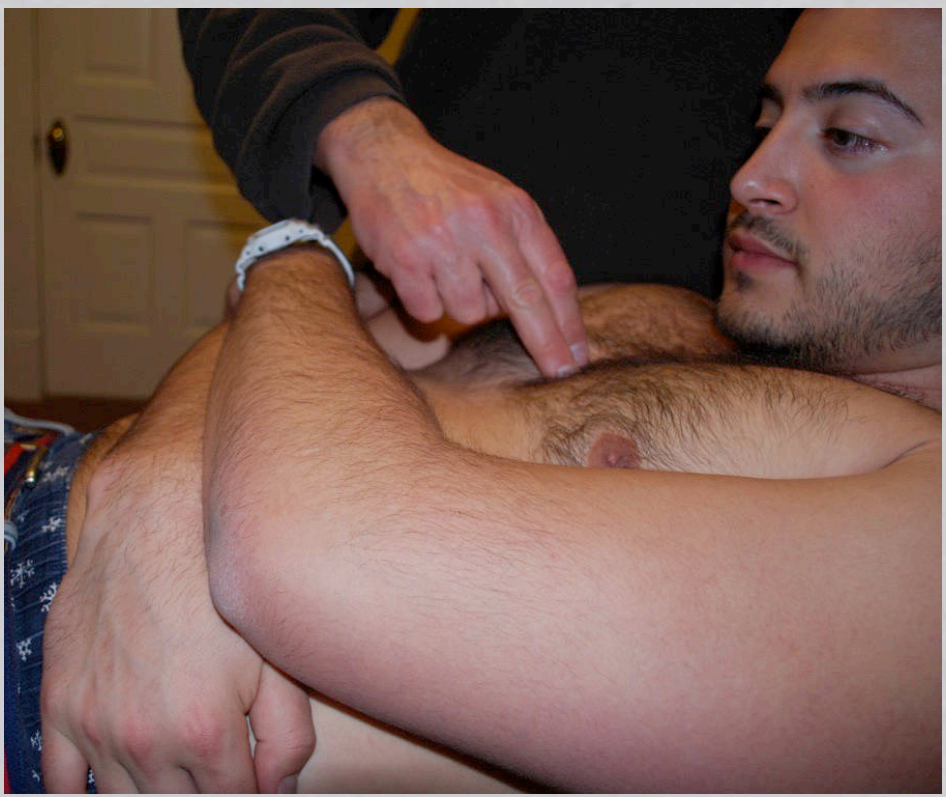
PC3-7

Treatment:
Patient's head extended off table.
Extension moderate to extreme.
Sidebend away.
Rotate away.
PC3 (rare)





COUNTERSTRAIN: RELEASE OF ANTERIOR TENDERPOINT STERNUM





COUNTERSTRAIN:
RELEASE OF T4-T6 POSTERIOR TENDERPOINTS

Strain-Counterstrain

Treatment of Posterior Lumbar TPs



Strain-
Counterstrain



Posterior Lumbar Transverse Process (TP)



Treatment of Posterior Lumbar Spinous and
Medial TPs

Strain-
Counterstrain

Treatment of High Ilium
With Flare-Out Left

Good For Coccydynia



Myofascial Release: Indirect Unwind (Finger)

Tx: Stabilize Proximal Joint
Induce all motion tests with distal end
Follow ease and compliance



Myofascial Release:
Alternate control grip of scapula





DIRECT MYOFASCIAL RELEASE OF TIGHT ELBOW FLEXOR BRACHIALIS

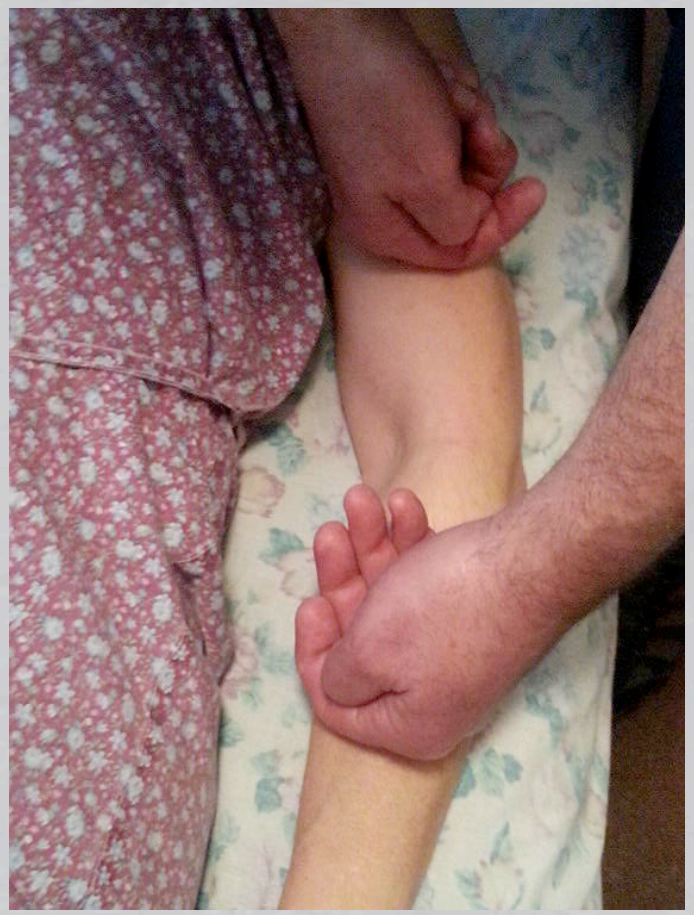




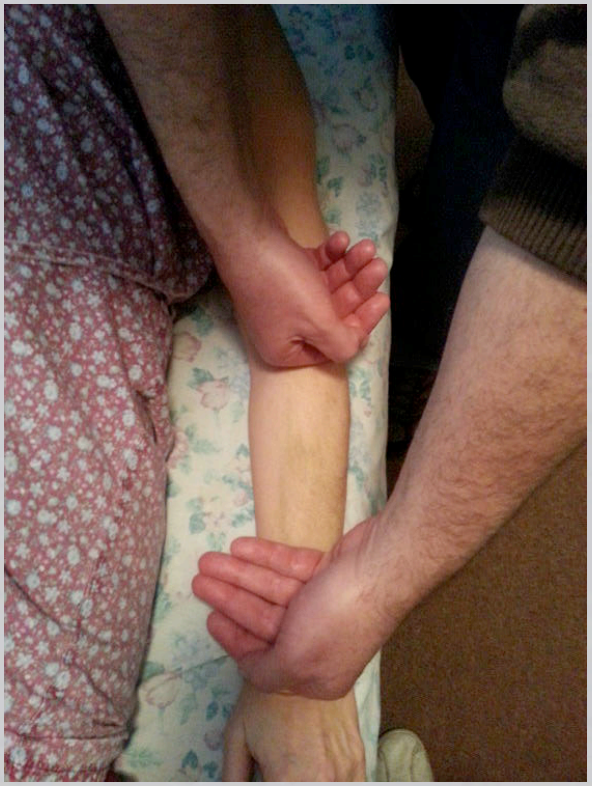
GOOD FOR GETTING FULL ELBOW EXTENSION

DIRECT MYOFASCIAL RELEASE OF UPPER EXTREMITY ANTERIOR CHAIN





GOOD FOR RELEASING TENSION FROM WRITING, TYPING AND COMPUTER MOUSE WORK



Nerve/fascia releases of sciatic in popliteal space and between calf bellies



Strain/Counterstrain (SCS)	Indirect	Passive
Craniosacral	Adults-Indirect / Children-Direct	Passive
Facilitated Positional Release	Indirect	Passive
High Velocity Low Amplitude (HVLA)	Direct	Passive
Ligamentous Articular Strain (or Balanced Ligamentous Tension)	Both	Both
Lymphatic Pump Techniques	Direct	Passive
Muscle Energy Techniques (MET)	Direct	Active
Myofascial Release (MFR)	Both	Both
Myofascial *Soft Tissue*	Both	Passive
Spencer Techniques	Direct	Active
Visceral	Both	Passive

Muscle Energy Techniques

MET is an active, direct treatment involving voluntary and precise patient movement against isometric resistance away from a pathologic barrier engaged by the practitioner.

Successful MET treatments result in reflexive relaxation of agonist muscle fibers. The isometric resistance resets the Golgi tendon organ sensation of the induced tension.

Myofascial Release Techniques

MFR is a soft tissue technique directed towards muscles (myo-) and fascia.

There are three different type of MFR:

1. Passive
2. Active direct
3. Active indirect

Strain/Counterstrain

A passive, indirect technique using the neuromuscular basis of somatic dysfunction.

The body is positioned at a point of ease and balance by straining a muscle at a joint, and shortening its antagonist to relieve pain.

Successful SCS treatments reset the muscle spindle reflex. The muscle spindle is a mechanoreceptor responsible for detecting muscle load/stretch.

High Velocity Low Amplitude

A passive, direct treatment where the physician engages the pathologic barrier
and uses a precise, quick, and small thrust through the restrictive barrier.

Decreased ROM is an indication for HVLA, as it is more advantageous to employ this technique when the barrier is firm.

Manual Medicine relies on visual observation of anatomical landmarks and their response to induced motion, as well as palpatory cues, to arrive at a diagnosis of somatic dysfunction.

Muscle Energy

Screening For Rotation Of Lumbars In Neutral Prone Position



Muscle Energy

Screening Lumbars For An ERS Dysfunction

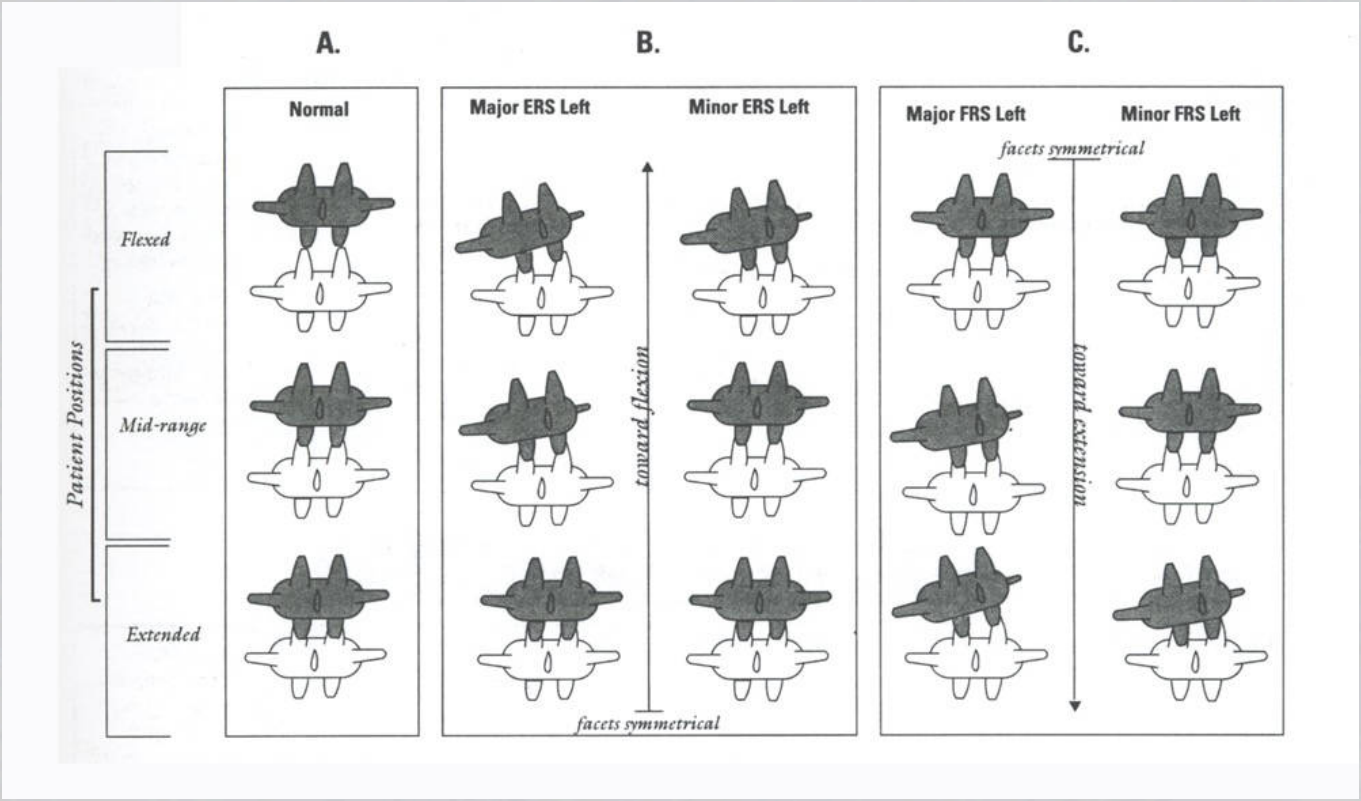
What Sticks Out In Flexion?



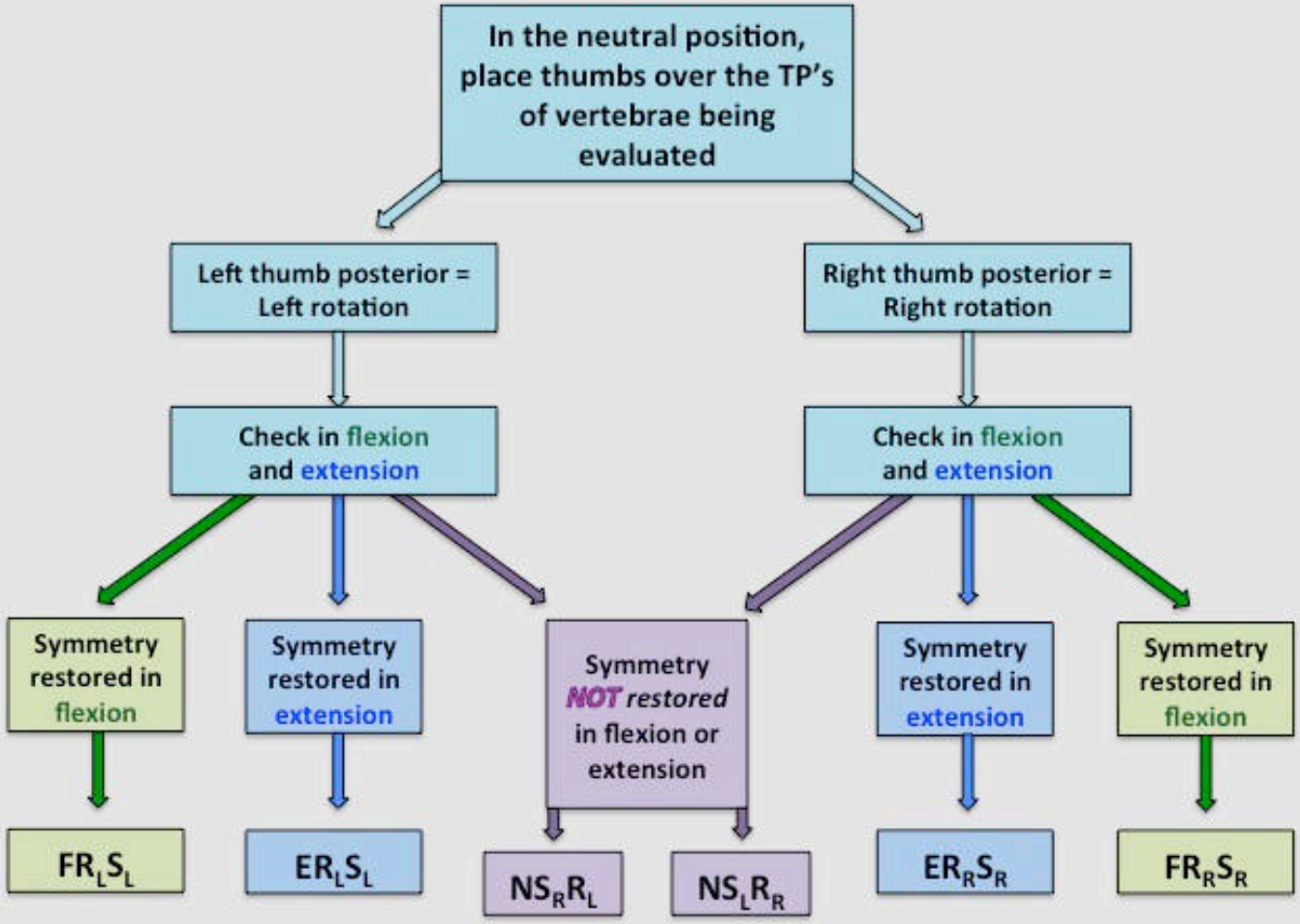
Assessment of Lumbar Transverse Processes In Prone Extended Position.

If one TP is posterior, the facet is stuck on the opposite side (for finding FRS restrictions)




A.
B.
C.
Normal
Major ERS Left
Minor ERS Left
Major FRS Left
Minor FRS Left
facets symmetrical
Patient Positions
Flexed
Mid-range
Extended
toward flexion
toward extension
facets symmetrical

Algorithm for Evaluating Somatic Dysfunction



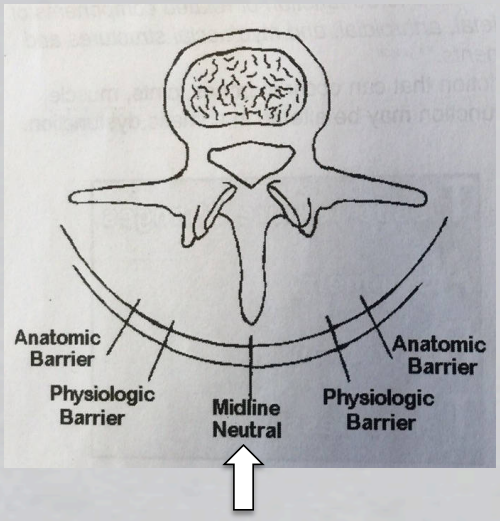
Osteopathy

The study of mind, matter and motion

A. T. Still

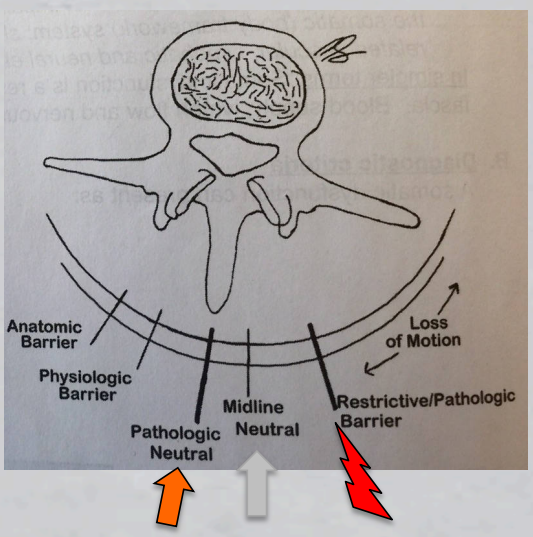
Physiologic, Anatomic, and Restrictive Barriers

Healthy



Midline Neutral, with normal physiologic & anatomic barriers

Restrictive/Pathologic



Pathologic Neutral, with restrictive/pathologic barrier

Findings in Acute and Chronic cases

Findings	Acute	Chronic
Tissue texture changes	Edematous, erythematous, boggy, with increased moisture. Muscles hypertonic	Decreased or no edema, no erythema, cool, dry skin with slight tension. Decreased muscle tone, flaccid ropy fibrotic.
Asymmetry	Present	Present with compensation in other areas of the body
Restriction	Present, painful w. movement	Present, decreased or no pain
Tenderness	Severe, sharp	Dull, achy, burning



Fryette's Laws describe the physiologic motion of the thoracic and lumbar spine *only*.

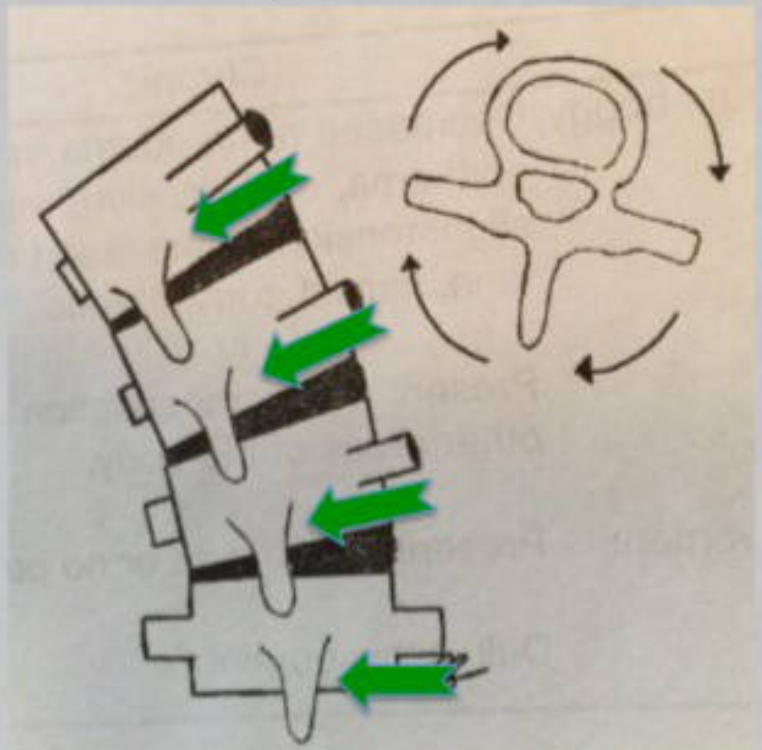
Law I:
When the thoracic and lumbar spine is in the *neutral position*, the coupled motions of sidebending and rotation for a **group of vertebrae** are such that sidebending and rotation occur in **opposite** directions.

Law II:
When the thoracic and lumbar spine is sufficiently forward or backward bent *(non-neutral)*, the coupled motions of sidebending and rotation in a **single vertebral unit** occur in the **same** direction.

Law III:
Initiating motion of a vertebral segment in ***any* plane** of motion will modify the movement of that segment in ***other* planes** of motion. For example, forward bending will decrease the ability to side bend or rotate.

Fryette's Law I

e.g., Left Sidebending *without* flexion or extension will cause Right Rotation of all vertebrae.



Summary of Fryette's Law I

Typical of *group* dysfunctions

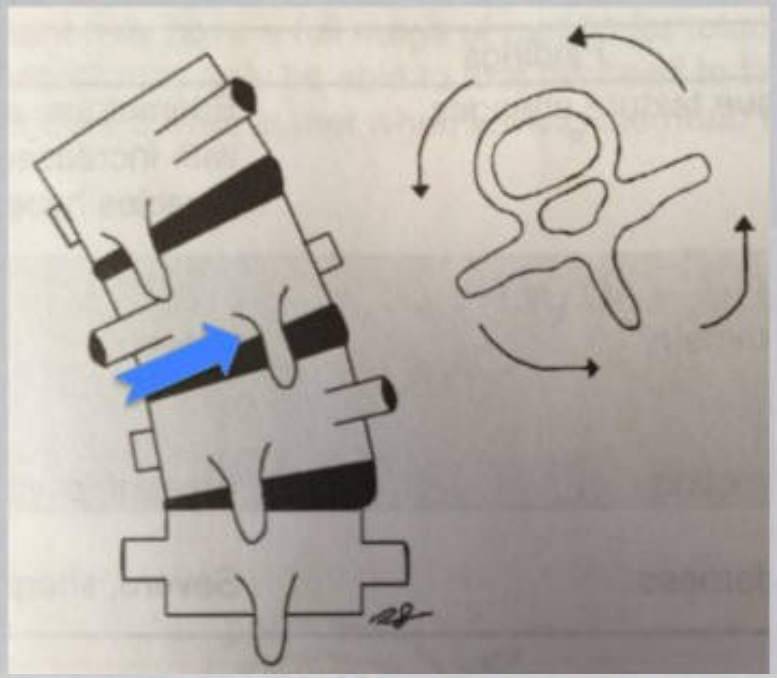
In the neutral position:

Sidebending *precedes* rotation, and

sidebending and rotation occur to *opposite sides*.

Fryette's Law II

e.g., Left Sidebending with *flexion or extension* will cause one vertebrae to rotate and sidebend to the *same* side, (to the left in this example).



Summary of Fryette's Law II

Typical of a single vertebral dysfunction

In a non-neutral (flexed or extended) position:

Rotation *precedes* sidebending, and

Sidebending and rotation *occur to the same side.*

e.g., T5 FR_RS_R or FRS_R

Summary of Fryette's Law III

Proposed by C.R. Nelson in 1948

Initiating motion at any vertebral segment in any *one* plane of motion will modify the mobility of that segment in the other *two* planes of motion.

For example, forward bending will decrease the ability to sidebend or rotate.

Fryette's Nomenclature

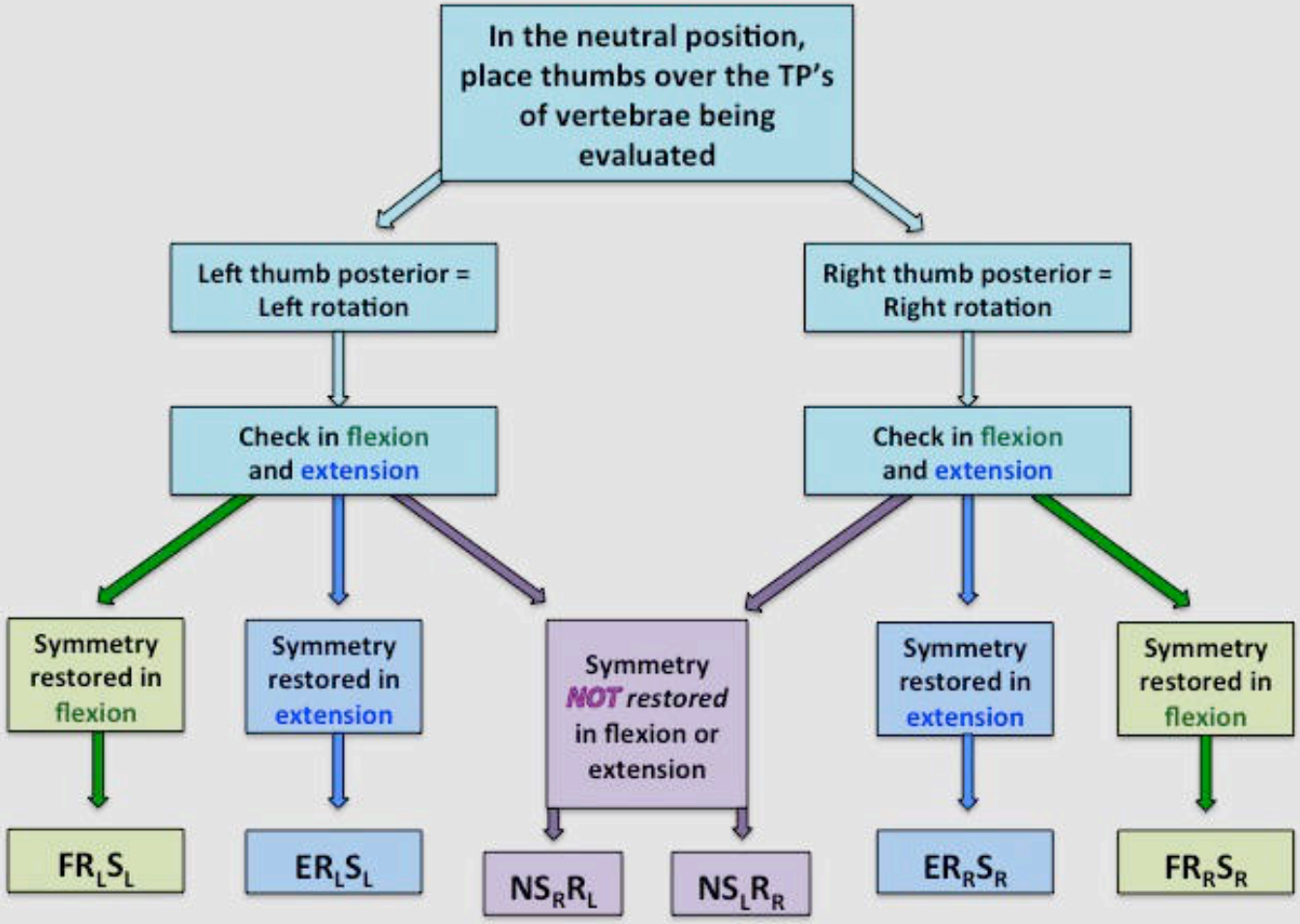
Fryette used this form of nomenclature to describe somatic dysfunction:

e.g., **NS_LR_R** = **N**eutral, **S**idebent Left, **R**otated Right

FR_RS_R = **F**lexed, **R**otated and **S**idebent Right

ER_RS_R = **E**xtended, **R**otated and **S**idebent Right

Algorithm for Evaluating Somatic Dysfunction



Motion	Axis	Plane
Flexion/Extension	Transverse	Sagittal
Rotation	Vertical	Transverse
Sidebending	Anterior - Posterior	Coronal



Muscle Contraction

Isotonic	Approximation of the muscle's origin and insertion without a change in its tension
Isometric	Increase in tension without an approximation of origin and insertion
Isolytic	Against resistance, while forcing the muscle to lengthen
Concentric	Approximation of the muscle's origin and insertion
Eccentric	Lengthening of muscle during contraction due to an external force



Treatment Types

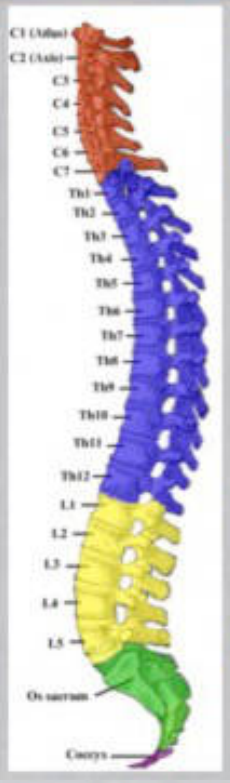
Direct: *Towards* the barrier

Indirect: *Away* from the barrier

Active: Patient assists during treatment

Passive: Patient relaxes during treatment

Compensatory Curves of the Axial Skeleton



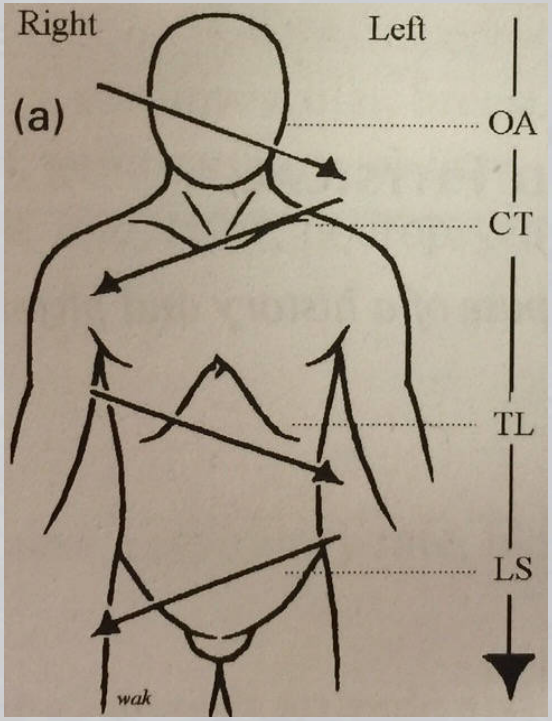
Occipito-atlantal junction (OA)

Cervicothoracic junction (CT)

Thoracolumbar junction (TL)

Lumbosacral junction (LS)

Common Compensatory Pattern of Zink



In 80% of healthy individuals, an alternating pattern of:

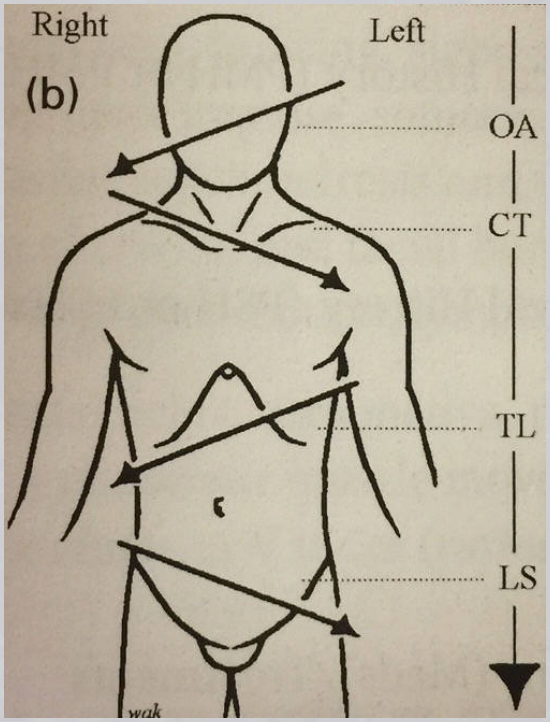
OA rotated left,

CT rotated right,

TL rotated left,

LS rotated right.

Uncommon Compensatory Pattern of Zink



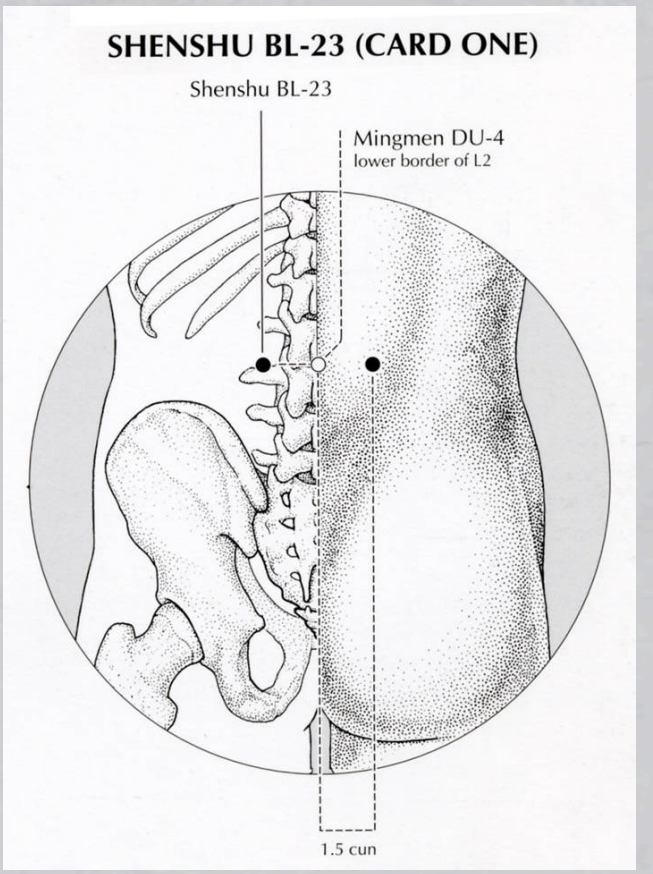
In the remaining 20% of healthy individuals, an alternating pattern of:

OA rotated right,

CT rotated left,

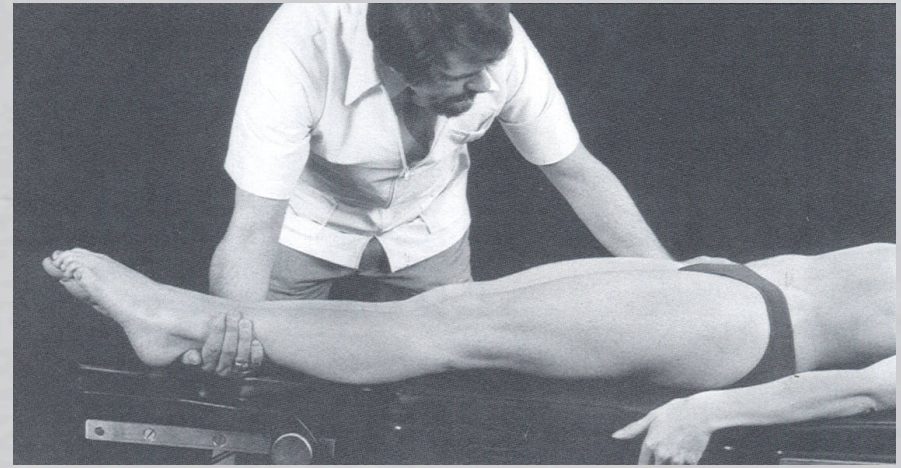
TL rotated right,

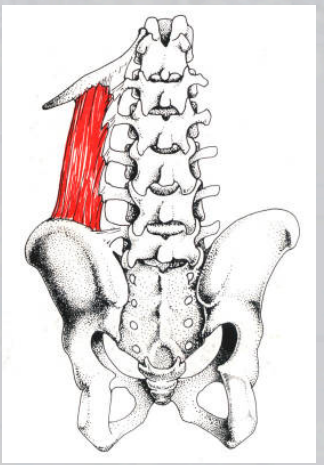
LS rotated left.

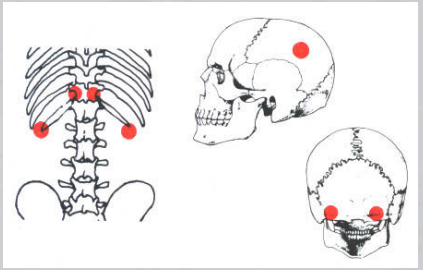


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Quadratus Lumborum







Strain-Counterstrain

Treatment of Posterior Lumbar TPs



Strain-
Counterstrain



Posterior Lumbar Transverse Process (TP)



Treatment of Posterior Lumbar Spinous and Medial TPs

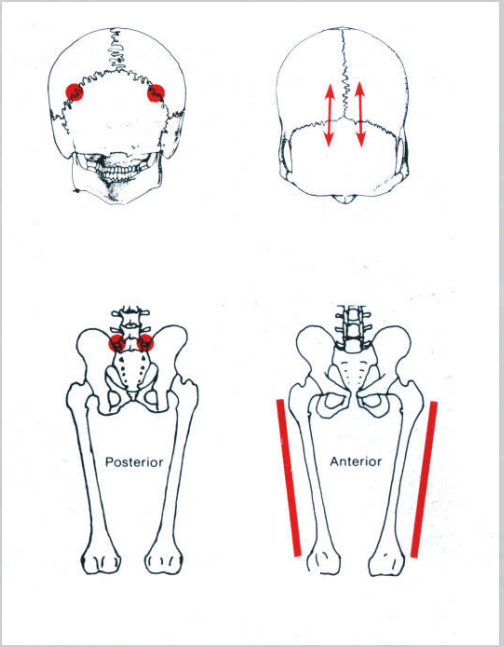
Pearls of BL-23

COMMON ISSUES:
Low Back Pain, Weak Back, Easily Chilled, Decreased Libido, Fear and Insecurity, Knee Problems, Dental Problems, Infertility, Erectile Dysfunction, Chronic Fatigue, Sore Throats, Chronic Illness, Ear Problems, Tinnitus, Genito-Urinary Issues

CHECK: Rehmannia, Adrenal Formulas, Ginseng, Tribulus, Astragalus, Vitamin A, Vitamin C, Uva Ursi, Cranberry Extracts, Licorice, Rhodiola, Withania

Gluteus Maximus





Strain-
Counterstrain

Treatment of High Ilium
With Flare-Out Left

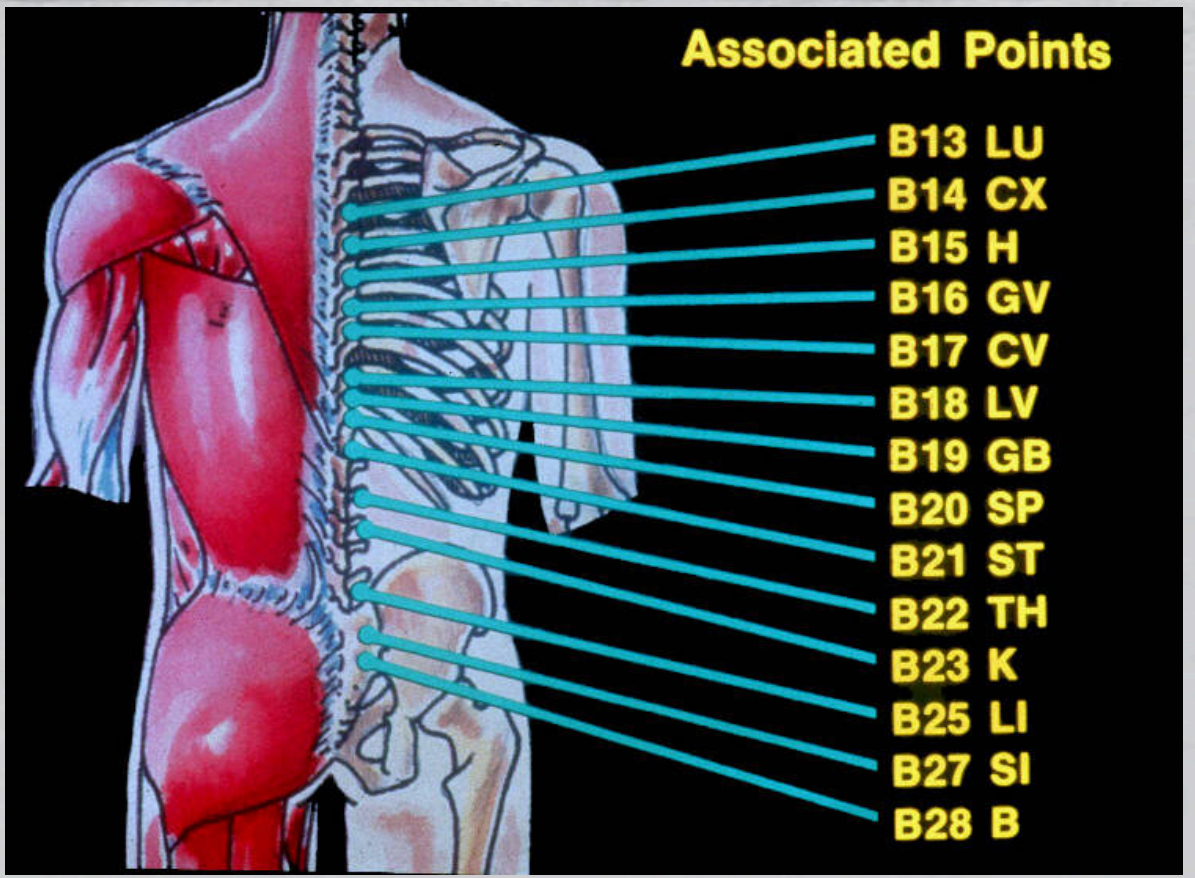
Good For Coccydynia

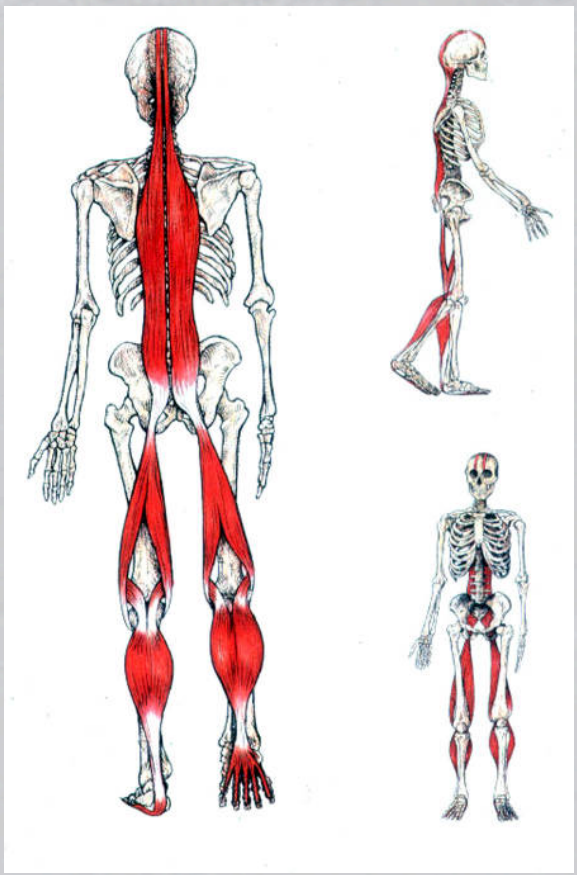


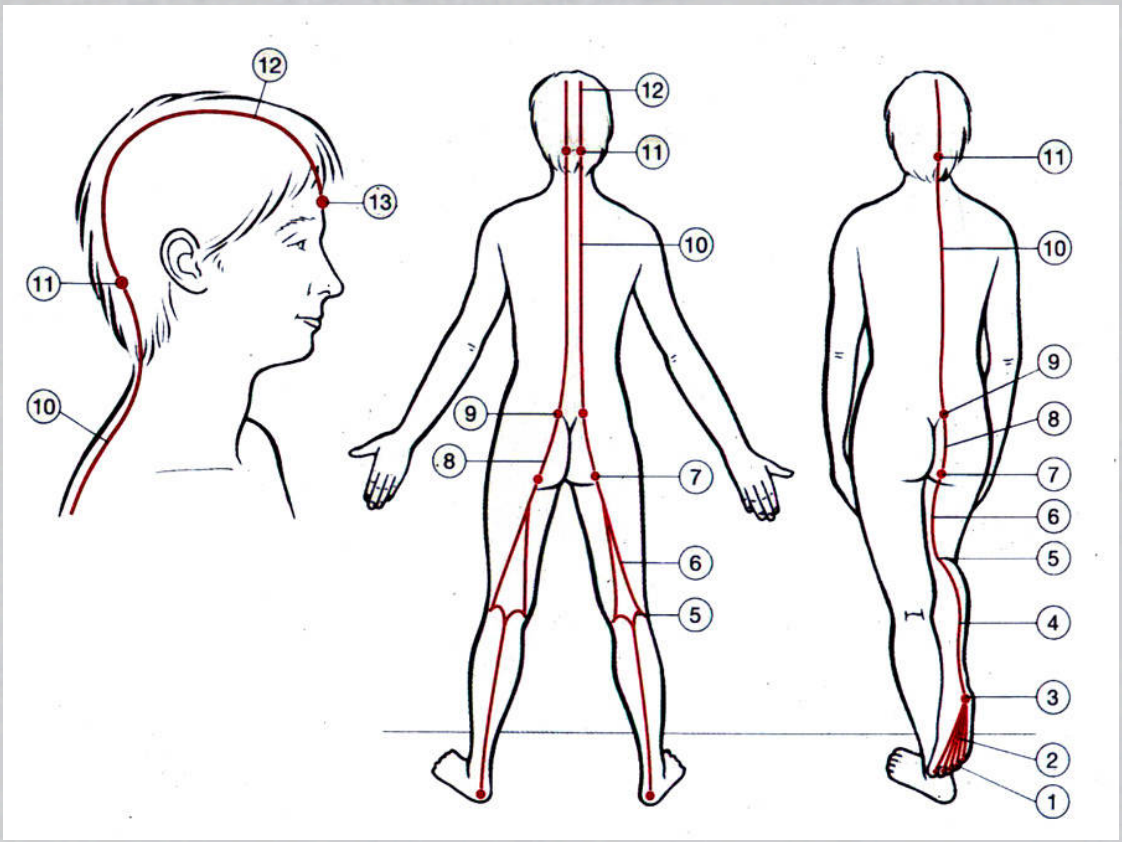
INTEGRATING ACUPUNCTURE AND MANUAL MEDICINE

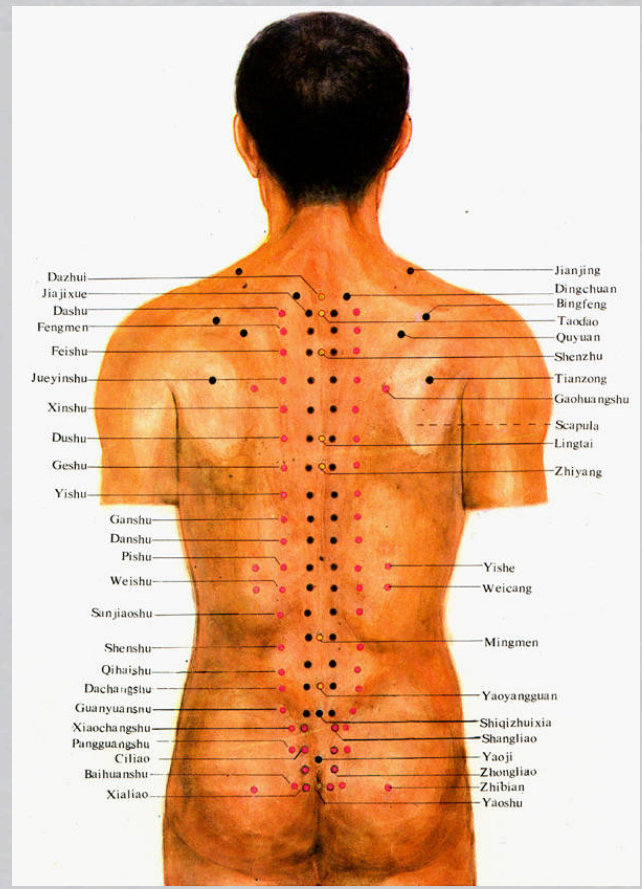
JAY SANDWEISS, DO
DANIEL BENSKY, DO

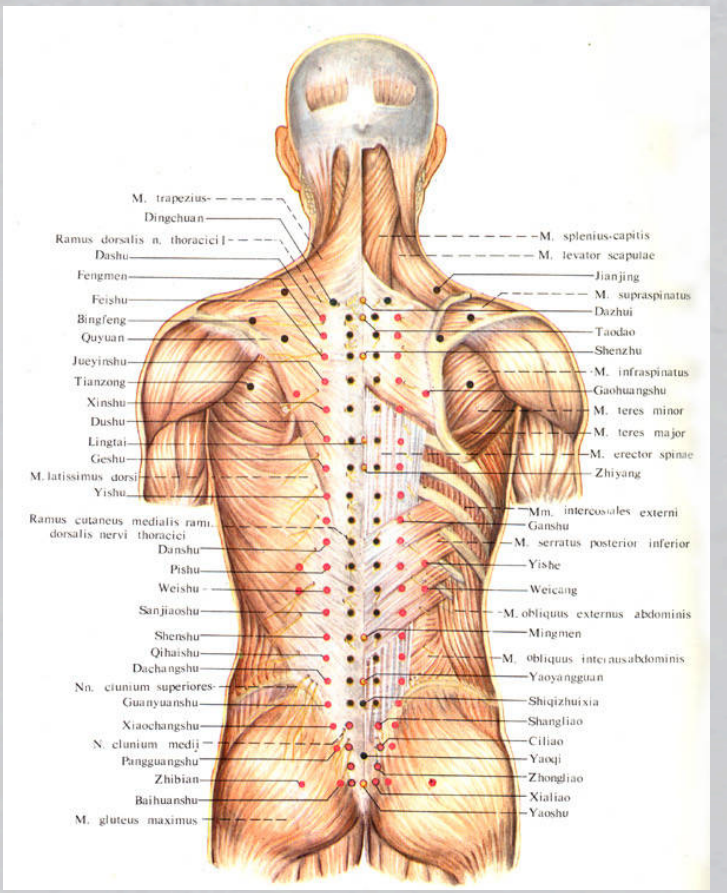
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Associated Points
B13 LU
B14 CX
B15 H
B16 GV
B17 CV
B18 LV
B19 GB
B20 SP
B21 ST
B22 TH
B23 K
B25 LI
B27 SI
B28 B

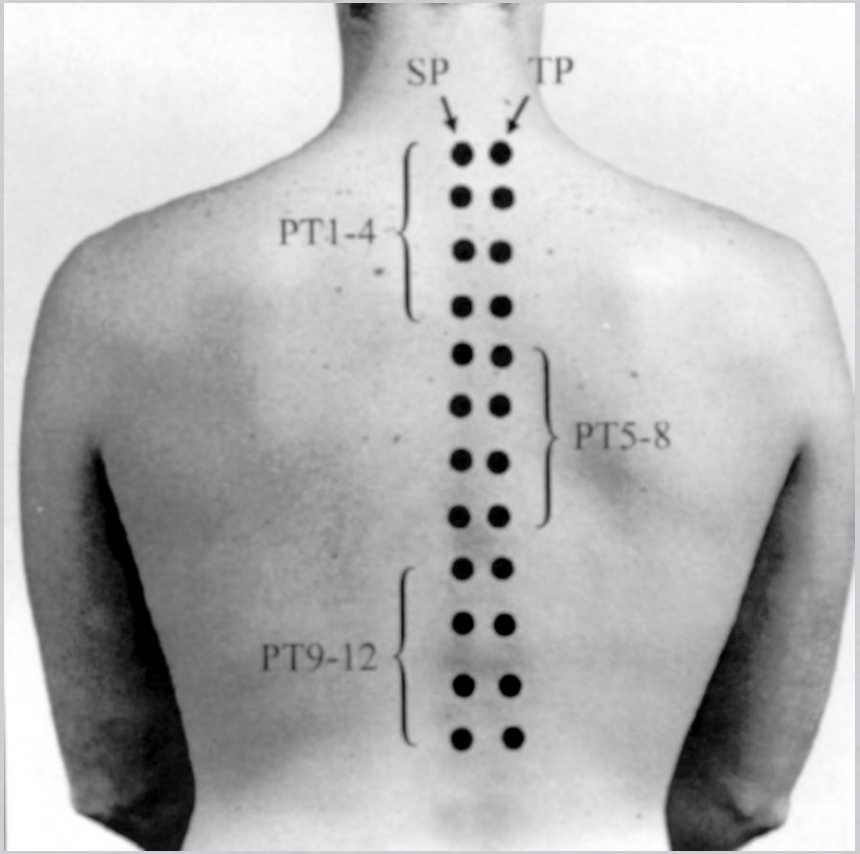


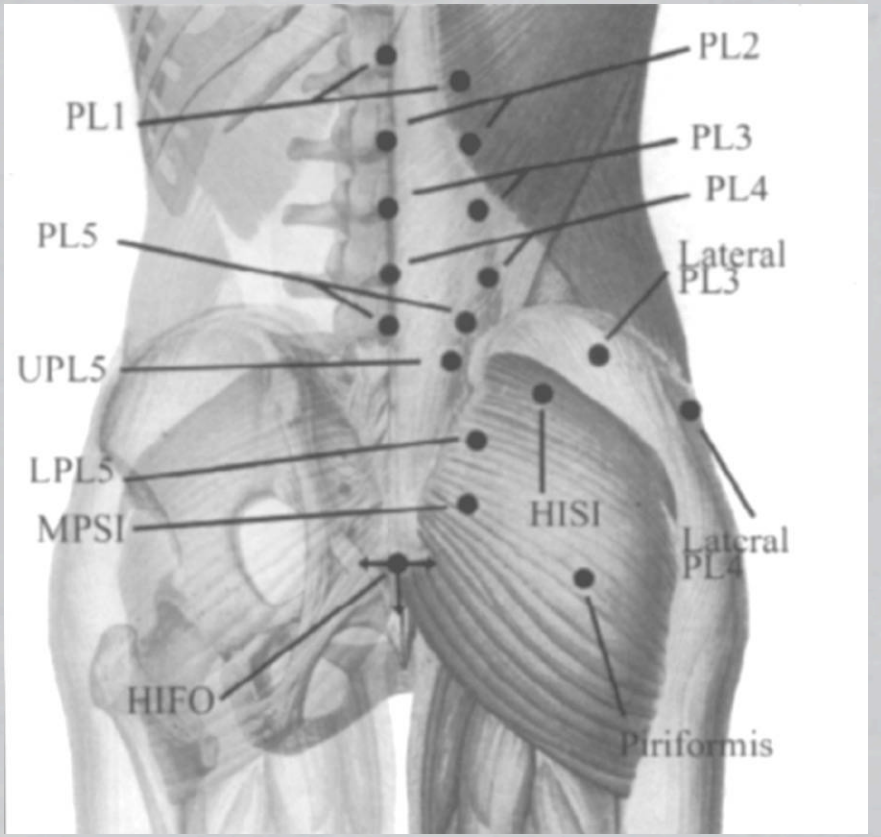

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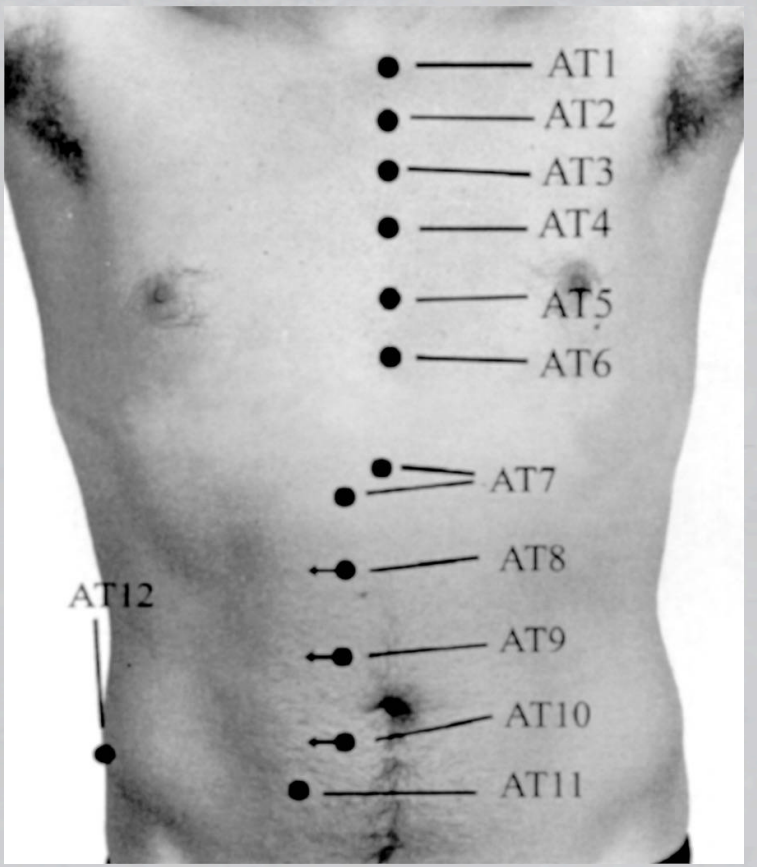

Dazhui
Jiajixue
Dashu
Fengmen
Feishu
Jueyinshu
Xinshu
Dushu
Geshu
Yishu
Ganshu
Danshu
Pishu
Weishu
Sanjiaoshu
Shenshu
Qihaishu
Dachangshu
Guanyuanshu
Xiaochangshu
Pangguangshu
Ciliao
Baihuanshu
Xialiao
Jianjing
Dingchuan
Bingfeng
Taodao
Quyuan
Shenzhu
Tianzong
Gaohuangshu
Scapula
Lingtai
Zhiyang
Yishe
Weicang
Mingmen
Yaoyangguan
Shiqizhuixia
Shangliao
Yaoji
Zhongliao
Zhibian
Yaoshu

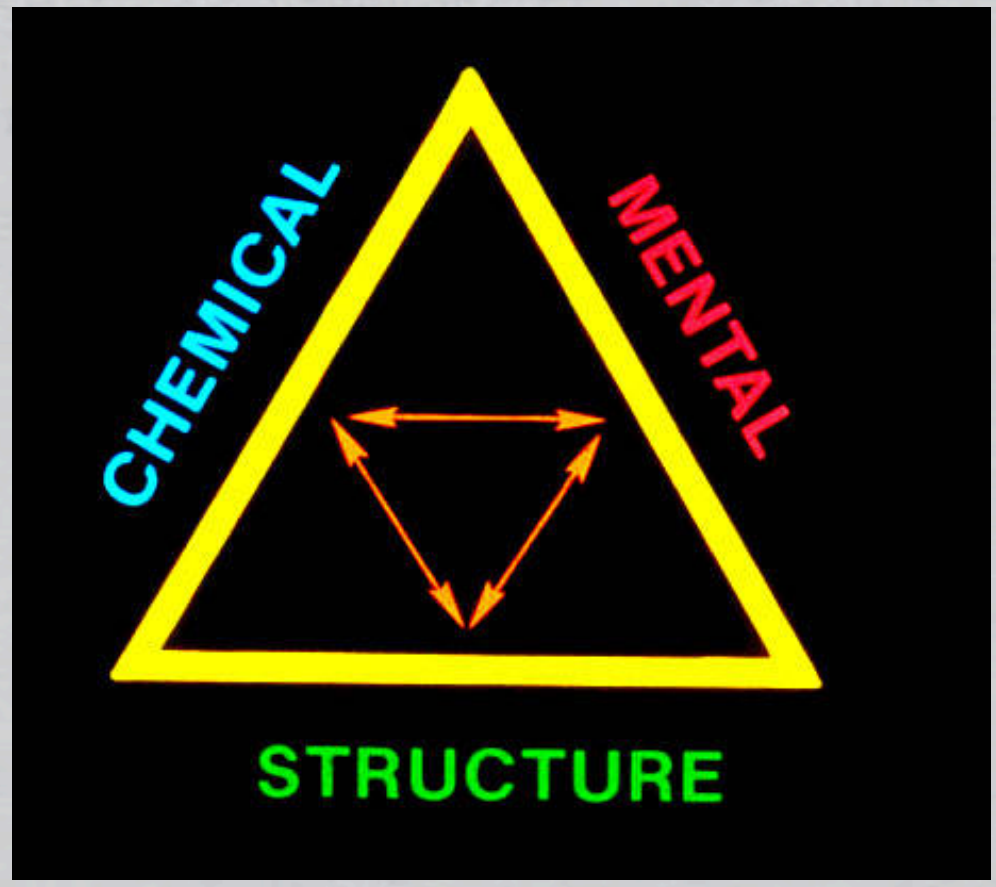

M. trapezius
Dingchuan
Ramus dorsalis n. thoracici I
Dashu
Fengmen
Feishu
Bingfeng
Quyuan
Jueyinshu
Tianzong
Xinshu
Dushu
Lingtai
Geshu
M. latissimus dorsi
Yishu
Ramus cutaneus medialis rami dorsalis nervi thoracici
Danshu
Pishu
Weishu
Sanjiaoshu
Shenshu
Qihaishu
Dachangshu
Nn. clunium superiores
Guanyuanshu
Xiaochangshu
N. clunium medii
Pangguangshu
Zhibian
Baihuanshu
M. gluteus maximus
M. splenius capitis
M. levator scapulae
Jianjing
M. supraspinatus
Dazhui
Taodao
Shenzhu
M. infraspinatus
Gaohuangshu
M. teres minor
M. teres major
M. erector spinae
Zhiyang
Mm. intercostales externi
Ganshu
M. serratus posterior inferior
Yishe
Weicang
M. obliquus externus abdominis
Mingmen
M. obliquus internus abdominis
Yaoyangguan
Shiqizhuixia
Shangliao
Ciliao
Yaoqi
Zhongliao
Xialiao
Yaoshu

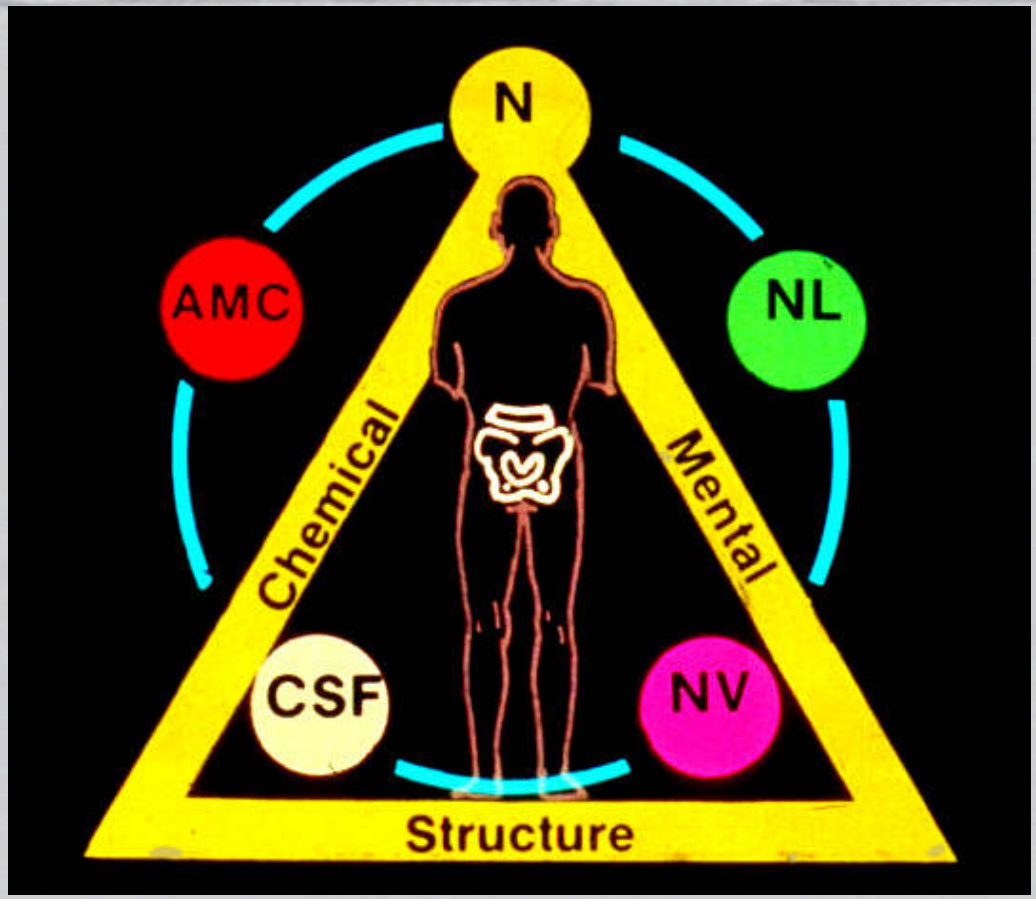

Dazhui
Dingchuan
Plexus brachialis
Vertebra thoracica I
Jianjing
Taodao
Bingfen
Spina scapulae
Dashu
Quyuan
Shenzhu
Fengmen
Tianzong
Feishu
Gaohuangshu
Jueyinshu
Jiajixue
Xinshu
Scapula
Lingtai
Dushu
Zhiyang
Geshu
Vasa intercostalia et
N. intercostalis
Yishu
Pulmo
Ganshu
Diaphragma
Danshu
Yishe
Pishu
Weicang
Weishu
Hepar
Ren
Sanjiaoshu
Plexus lumbalis
Mingmen
Shenshu
Qihaishu
Ureter
Dachangshu
Guanyuanshu
Yaoyangguan
Xiaochangshu
Shiqizhuixia
Pangguangshu
A. glutea superior et
N. gluteus superior
Baliao
Yaoqi
Baihuanshu
Zhibian
Yaoshu
A. glutea inferior
Hiatus sacralis
N. ischiadicus


SP
TP
PT1-4
PT5-8
PT9-12

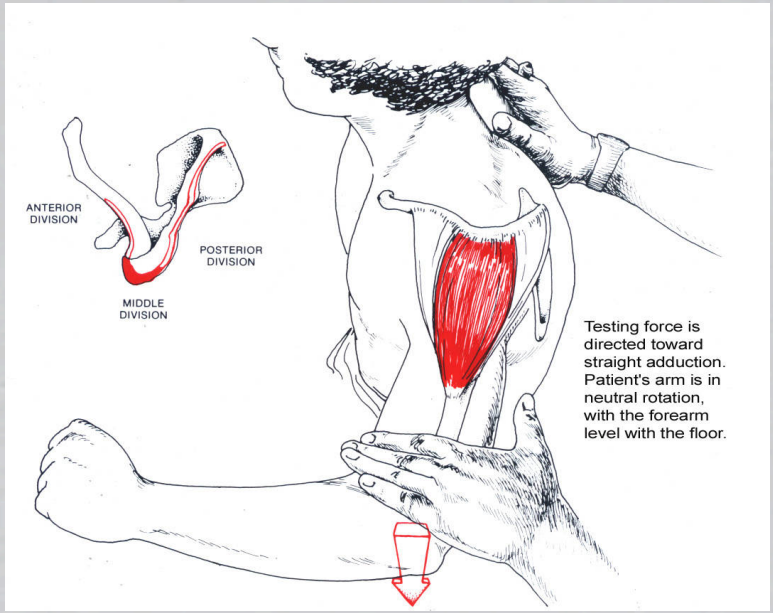

PL2
PL1
PL3
PL4
PL5
Lateral
PL3
UPL5
LPL5
HISI
MPSI
Lateral
PL4
HIFO
Piriformis

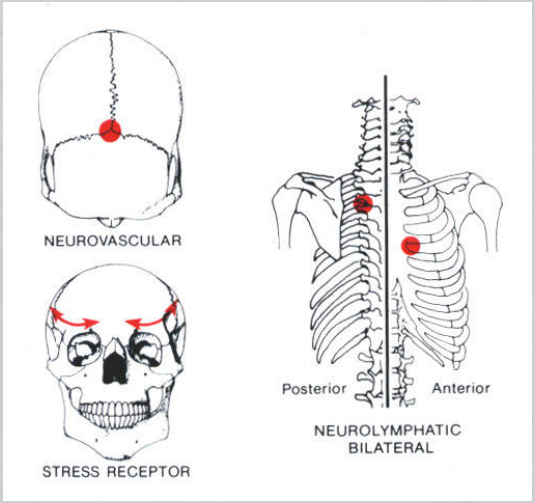

AT1
AT2
AT3
AT4
AT5
AT6
AT7
AT8
AT12
AT9
AT10
AT11


CHEMICAL
MENTAL
STRUCTURE


N
AMC
NL
Chemical
Mental
CSF
NV
Structure

Deltoid - Middle



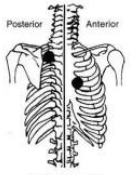


Deltoid — Anterior Division

Origin: lateral one-third of clavicle on its anterosuperior border.
Insertion: deltoid tuberosity of humerus.
Action: abduction of humerus in combination with other portions of the deltoid; flexes and internally rotates the humerus.
Test: The seated or standing patient flexes the elbow and shoulder to 90°, with slight external rotation of the humerus. This is indicated by the elevation of the distal forearm. Contact is made at the distal humerus with pressure in a direction of adduction and slight extension.
Nerve supply: axillary, **C5, 6**.
Neurolymphatic:
Anterior: 3rd intercostal space near sternum.
Posterior: between T3, 4 near laminae.
Neurovascular: bregma.
Nutrition: lung concentrate or nucleoprotein extract, vitamin C, RNA.
Meridian association: lung.
Organ association: lung.


NEUROVASCULAR


STRESS RECEPTOR



NEUROLYMPHATIC
BILATERAL


8—112.

8—113. Pressure is directed toward adduction and slight extension.

Applied Kinesiology is a unique system of diagnosis and treatment that **utilizes manual muscle testing to determine the underlying factors responsible for somatic dysfunctions.**

Each muscle in the body has been correlated with a specific organ or gland, acupuncture meridian, Chapman reflex, Bennett's reflex, nutritional need, cranial stress receptor or other significant treatment modality.

A protocol is taught that systematically seeks out the specific therapies needed by the patient to achieve a healing response.

Applied Kinesiology began over 58 years ago, and has continued to evolve as a powerful force in the healing arts.

The founder, Dr. George Goodheart, Jr., has expanded upon the viscero-somatic concept to include the major muscles of the body, in addition to the traditional spinal-level relationships.

The benefits of learning Applied Kinesiology are *many:*

One learns to artfully test all the major muscle groups in the body.

This muscle testing helps us find the *exact* weakness pattern underlying a patient compaint, (e.g., shoulder, knee or back complaint).

On the most advanced level, **the Applied Kinesiologist acquires a powerful algorithm** for working through patient problems.

This algorithm integrates novel concepts of holographic neurology with the treatment techniques of numerous other healing arts.

Applied Kinesiology is quite helpful in working with chronic and recurrent somatic dysfunctions.

Muscle testing is the basic tool used in Applied Kinesiology.

Kendall and Kendall wrote the first book on manual muscle testing in the late ‘40’s, based on their work with polio victims.

Kendall and Kendall used a five point system for grading muscle strength.

In Applied Kinesiology, we use a muscle test that has been described by the Institute of Sports Medicine and Athletic Trauma, as a “break test technique" method.

The basic concept of muscle testing is to **challenge the ability of the muscle to adapt to an increase stress after the patient has reached maximal contraction of muscle.**

Muscle testing is an *art* as well as a science, and it takes time to become proficient in learning muscle testing.

Fortunately, the rules are rather simple…

Rules for Muscle Testing

1. **Approximate the orgin and insertion of the muscle** and place the body part in a position that *minimizes* any other muscles that can contract to either support or recruit during the contraction of the prime mover.

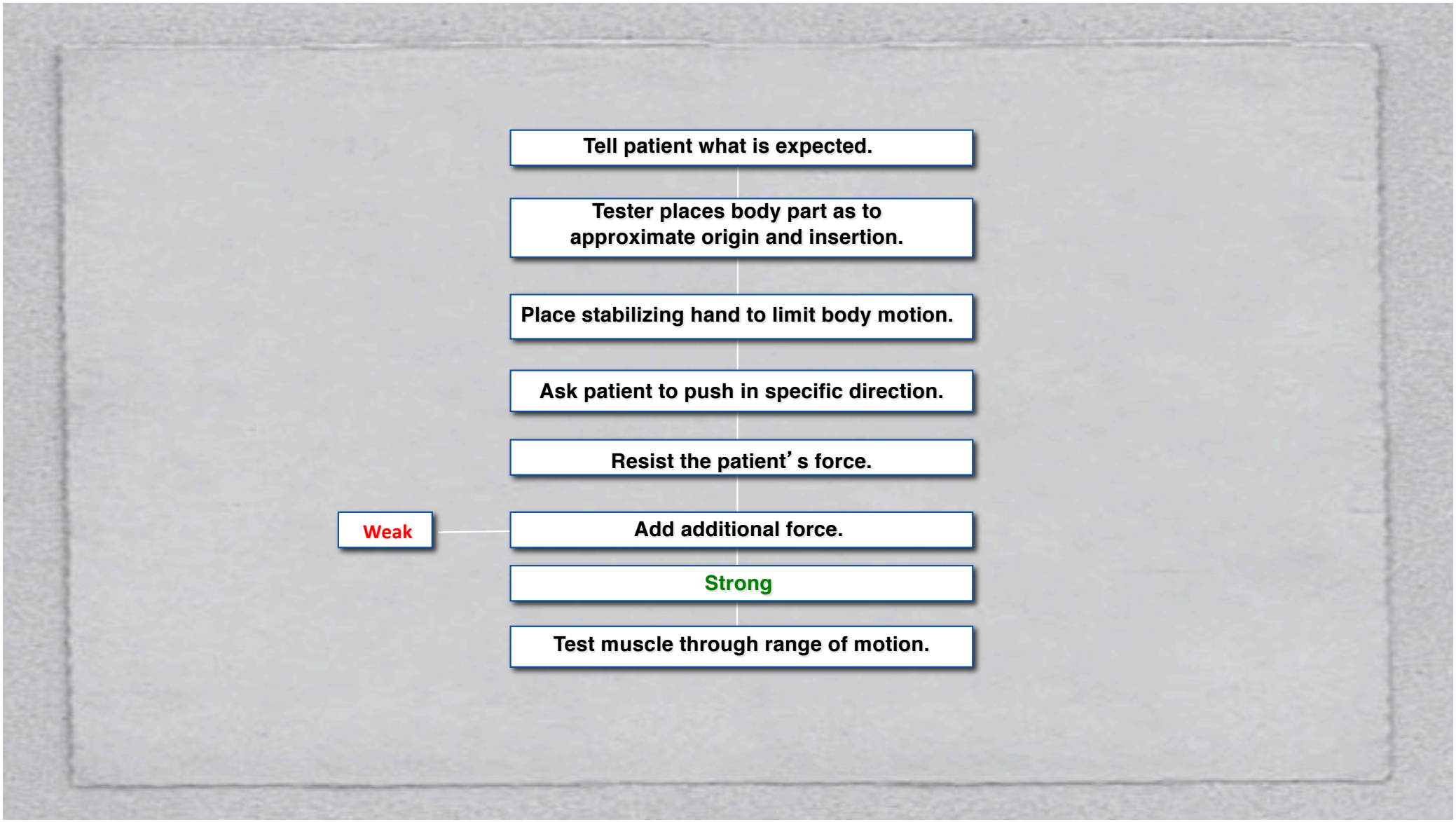
1. **Supply adequate support to the person being tested** so that they do not move or alter their position during the test.

3. **Use a broad, flat contact** with the fleshy portions of your hands so that you do not cause pain or discomfort where you test or stabilize the patient.
4. **The testing pressure is applied at a 90-degree angle to the arc of movement of the body part.**

   Another way of saying this is that the pressure is applied at the tangent to the arc of the movement of the body part.

5. **Try to keep your forearm in line with the direction of force.**

6. **Testing should be done using your weight,** and *not* your hand or forearm strength. The amount of force depends upon the relative strength and health of the person you are testing.
7. **Instruct the patient to apply pressure against your hand.** When you feel the patient apply the pressure, increasing your resistance against their pressure. When there is no increase in pressure, apply an additonal force in the testing direction.
8. You are now testing the patient's ability *to react* to the additional force adapting their neuromuscular system, as if in a challenge mechanism.


Tell patient what is expected.
Tester places body part as to approximate origin and insertion.
Place stabilizing hand to limit body motion.
Ask patient to push in specific direction.
Resist the patient's force.
Weak
Add additional force.
Strong
Test muscle through range of motion.

Somatic Dysfunction

- Impaired or altered function of related components of the somatic system including the skeletal, arthrodial, myofascial structures and their related vascular, lymphatic and neural elements.

Inhibition

- Associated with somatic dysfunctions, no matter which components are impaired
- Implies consideration of all components in treatment planning

Weakness

- Inhibition-> Weakness-> Imbalance-> Compensatory strategies-> Further dysfunctions-> Often cause local breakdown, which can be inflammatory, e.g. bursitis, tendonitis, fasciitis or can be secondary to overuse, e.g. sprain/strain

Weakness

- For want of a nail the shoe was lost.
- For want of a shoe the horse was lost.
- For want of a horse the rider was lost.
- For want of a rider the battle was lost.
- For want of a battle the kingdom was lost.

Inhibition

- Causes local and distant weakness, depending on location and specific components involved
- Peripheral dysfunctions, except neurogenic ones, associated with local weakness

Inhibition

- Spinal dysfunctions usually cause distant weakness in distributions similar to spinal motor nerves leaving at that level

Manual Muscle Testing (MMT)

When done well, relatively quickly
provides accurate and reproducible data

Somatic Dysfunction Inhibition

Weakness predicts location of the dysfunction
Location of the dysfunction predicts weakness

T10-L2

- Hip : all motions

L3

- Hip : adduction
- Hip : flexion/external rotation combination
- Knee : extension

L4

- Hip : adduction
- Hip : abduction
- Hip : external rotation
- Knee : extension
- Knee : flexion
- Ankle : dorsiflexion
- Ankle : inversion
- Toe : extension

L5

- Hip : abduction
- Hip : external rotation
- Knee : flexion
- Ankle: inversion
- Ankle: dorsiflexion
- Toe : extension

S1

- Hip : internal rotation
- Hip : extension
- Ankle : eversion
- Ankle : dorsiflexion with inversion
- Toe : flexion

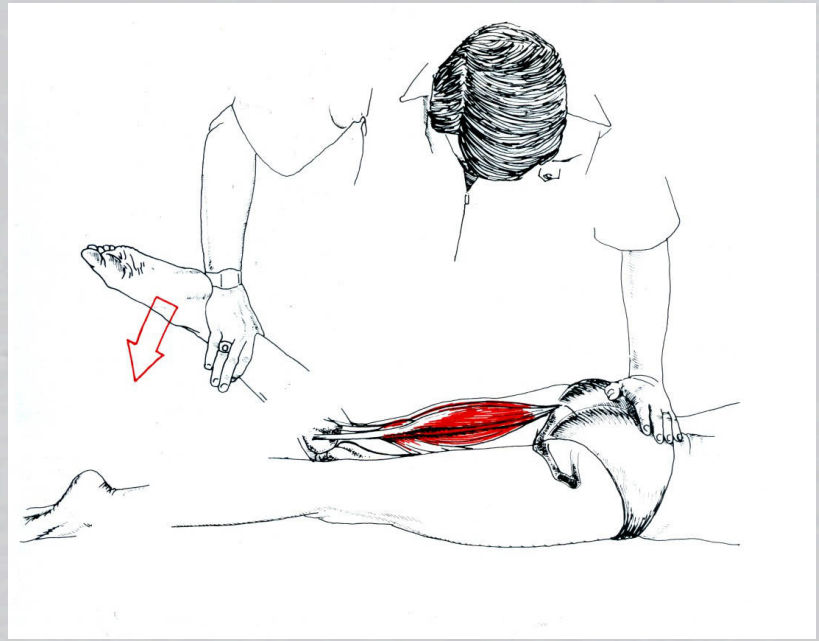
Interpreting weakness

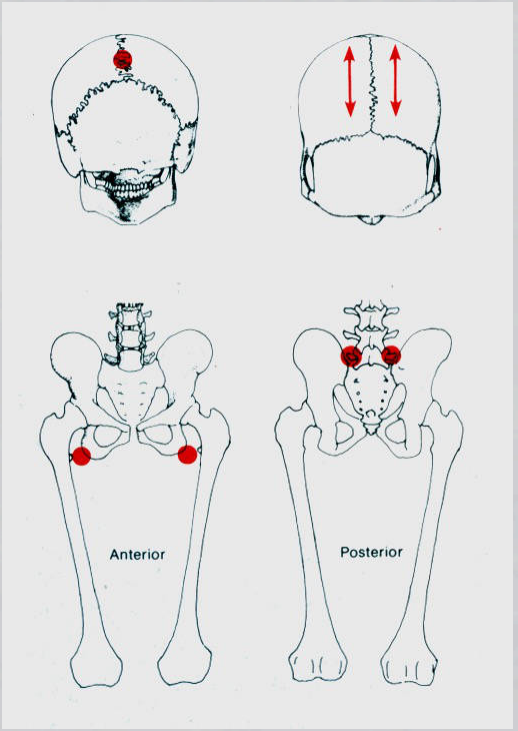
Where to look for dysfunctions
with findings of focal weakness

Hip Flexors	T10-L2
Hip Extensors	T10-L2 S1 Ilial shear (isolated) Sacral counternutation (isolated bilaterally)
Hip Adductors	T10-L2 L3
Hip Abductors	T10-L2, L4, L5, S1 Innominate rotation Ilial Flare (isolated)
Hip Internal Rotators	T10-L2, L5, S1 Innominate rotation Ilial Flare (isolated)
Hip External Rotators	T10-L2, L5, S1 Ilial Flare (isolated)

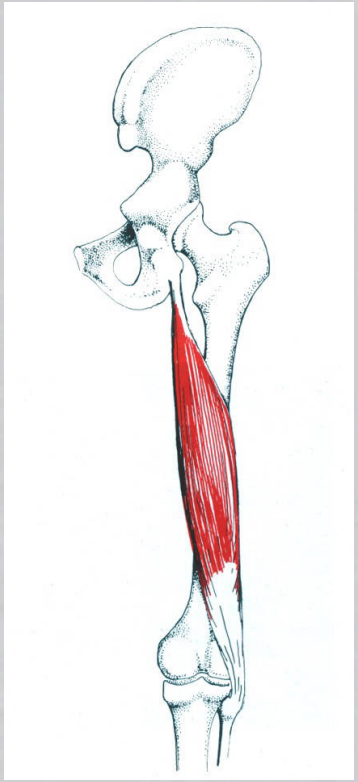
Knee extensors	L2, L3, L4
Knee flexors	L4, L5, S1 Sacral Nutation (Bil. Isolated)
Ankle Inversion/ Plantarflexion	L4, L5
Ankle Inversion/ Dorsiflexion	S1 Ipsilateral innominate rotation
Ankle Eversion/ Plantarflexion	S1 Tib/fib at ankle
Ankle Eversion/ Dorsiflexion	S1 Tib/fib at knee

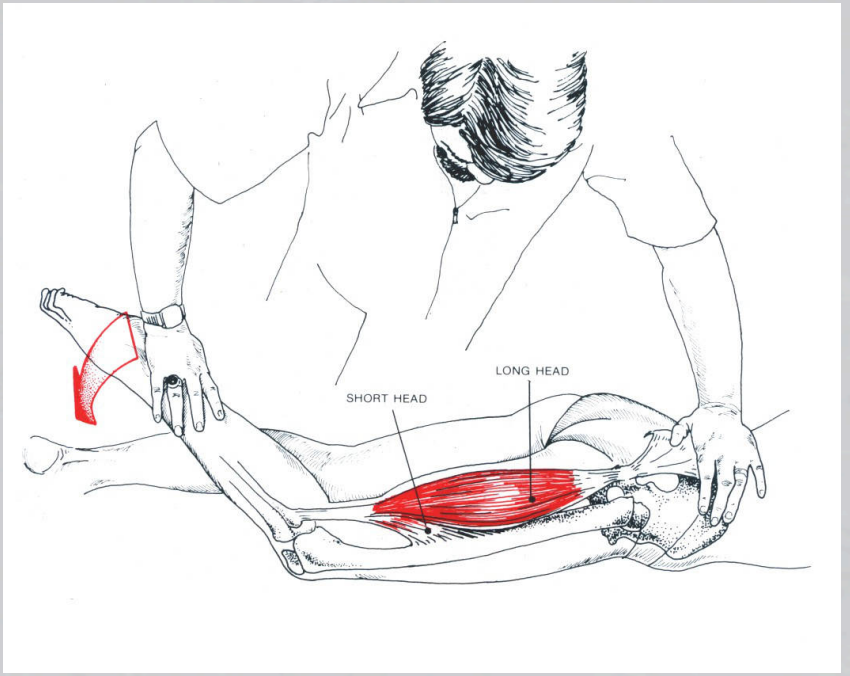
Hamstring



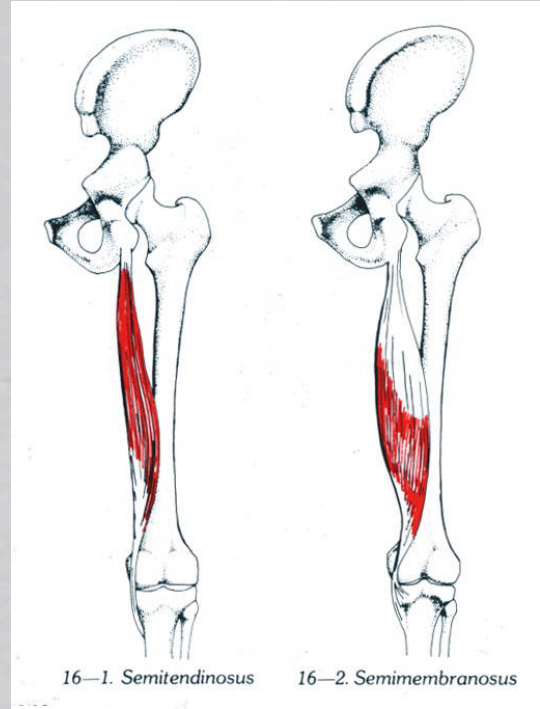


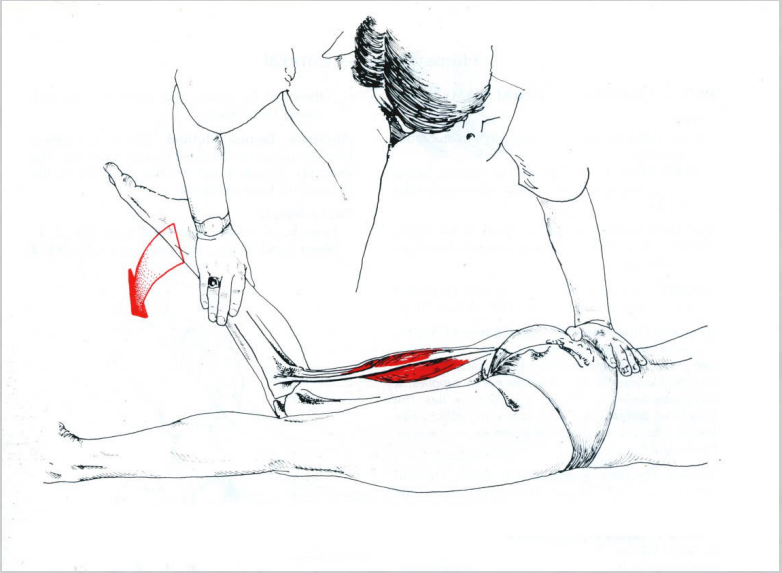
Hamstring - Lateral



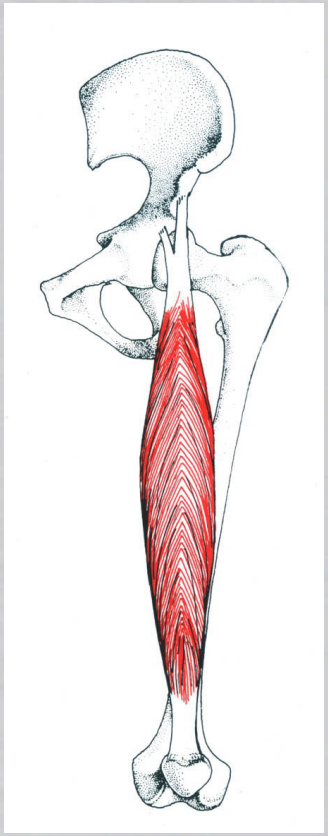


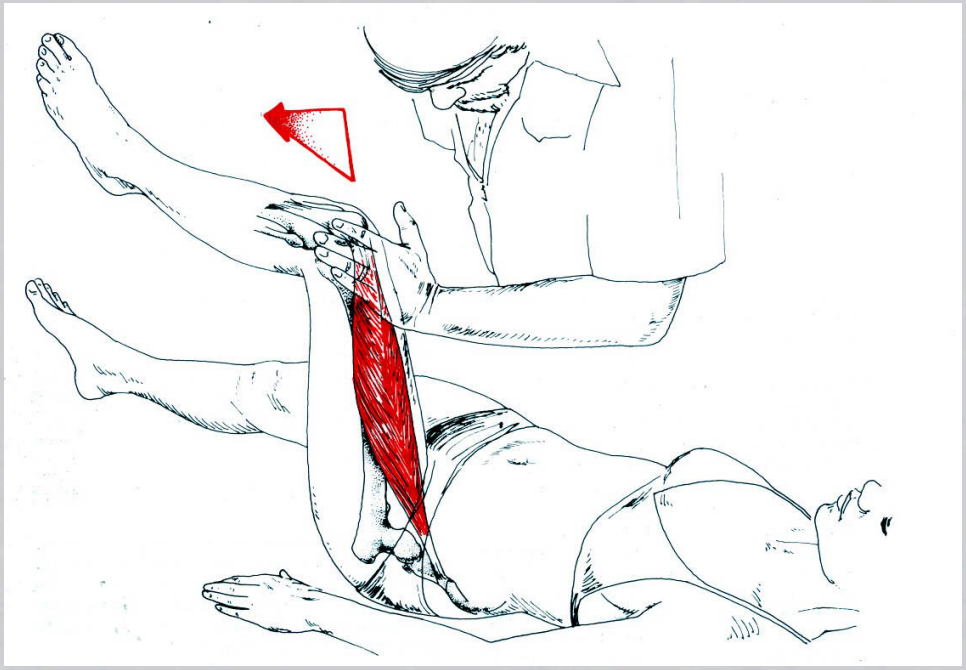
Hamstring - Medial



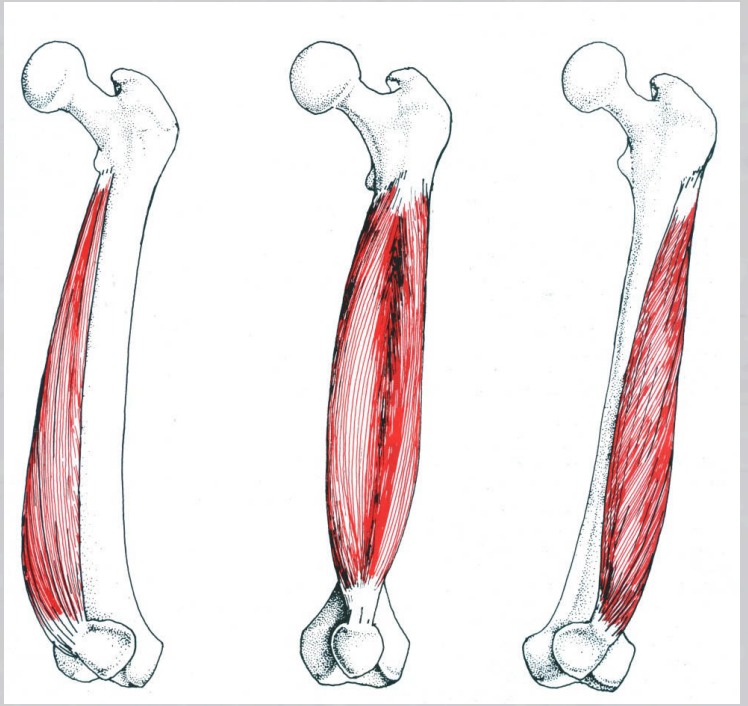


Quadriceps

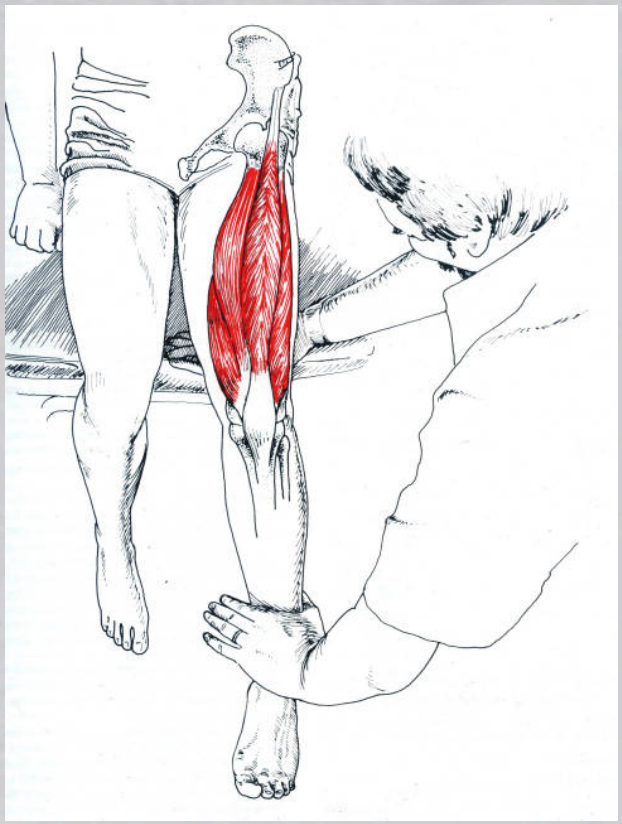


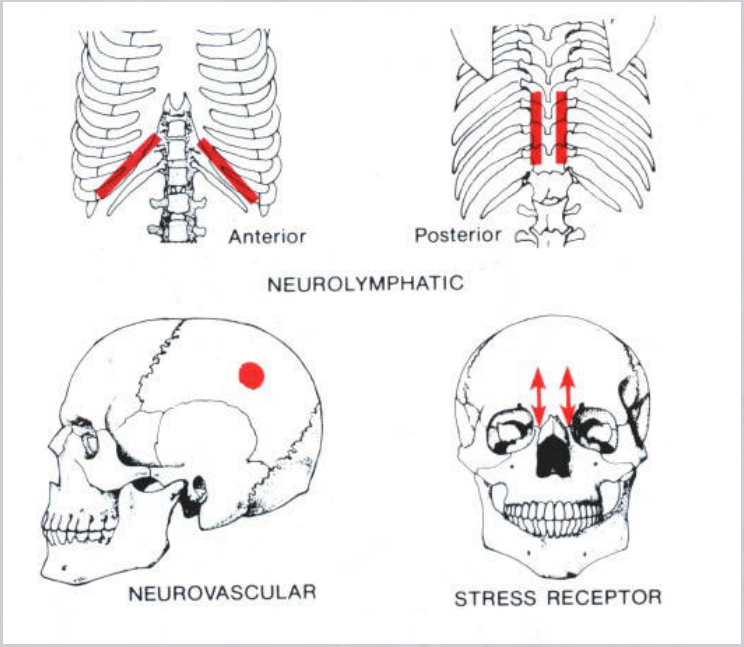


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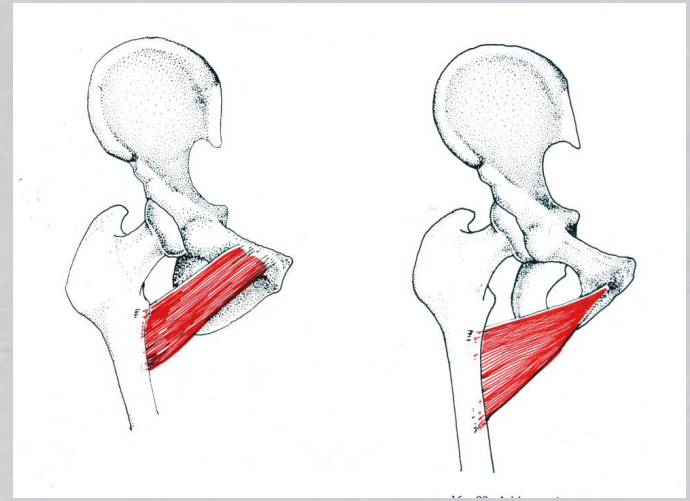


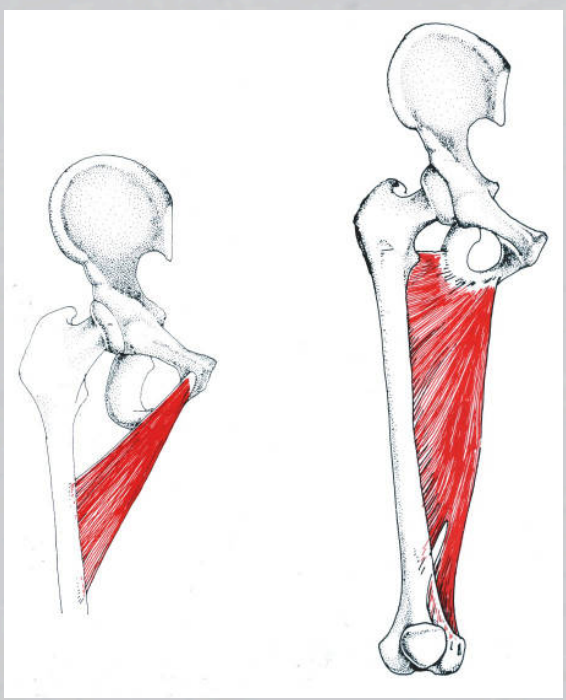
Quadriceps



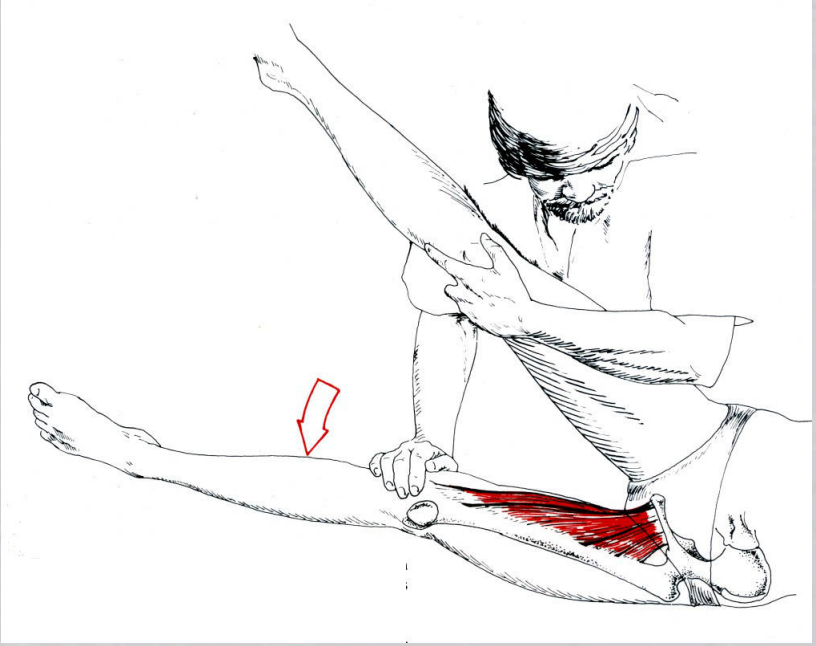

Anterior
Posterior
NEUROLYMPHATIC
NEUROVASCULAR
STRESS RECEPTOR

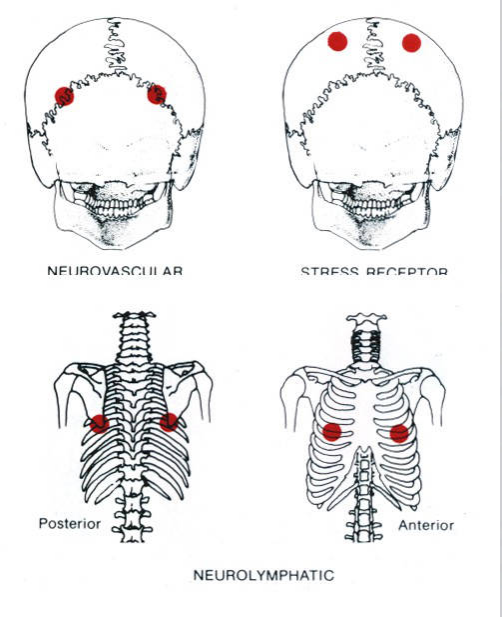
Adductors

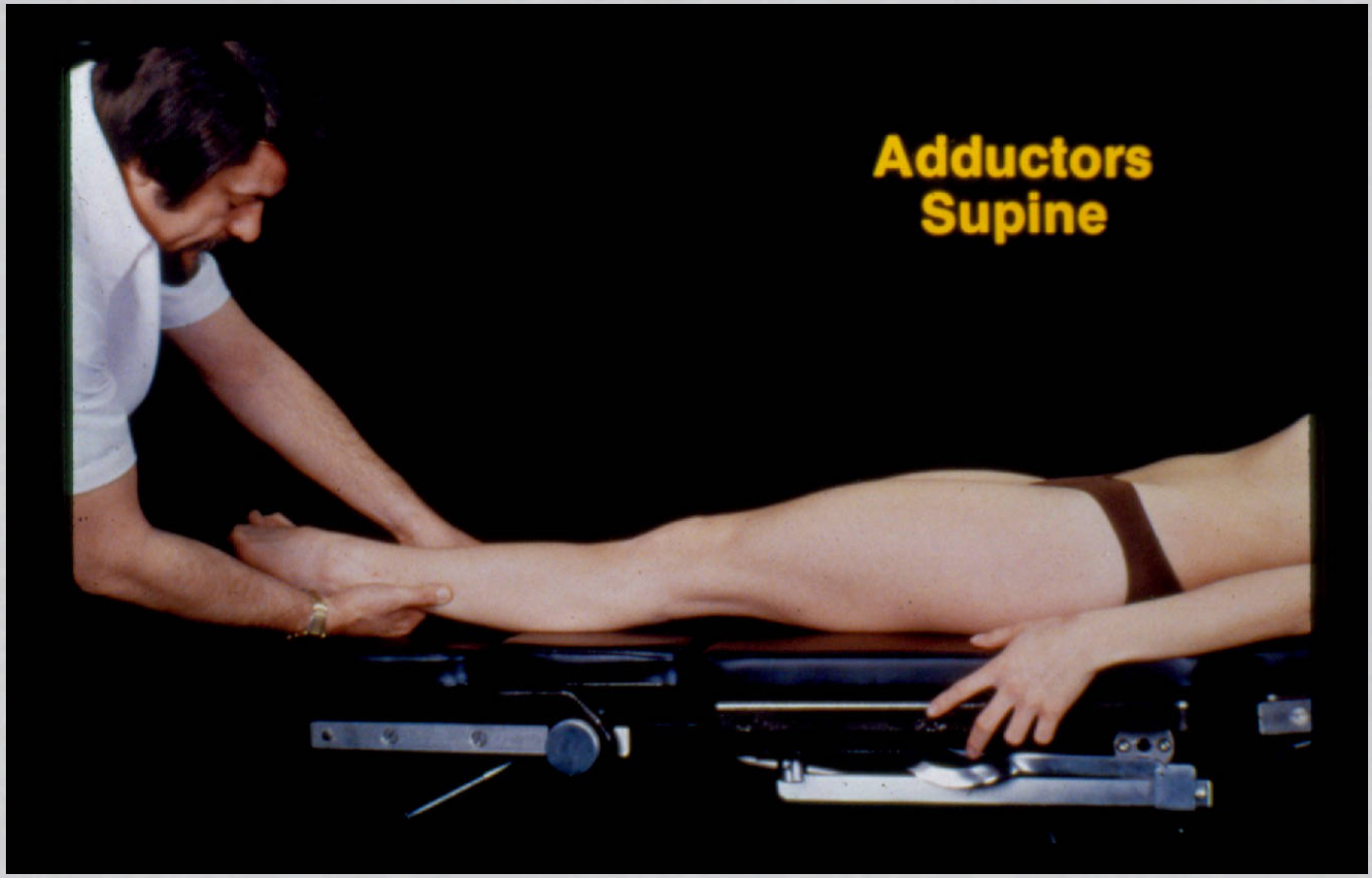




Adductors

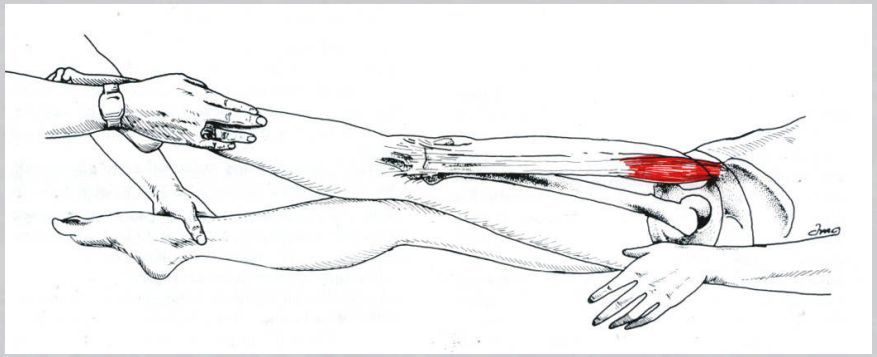


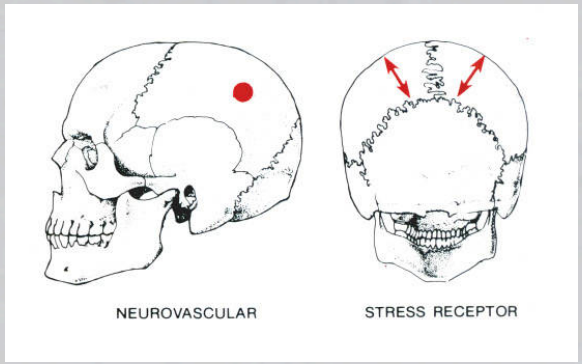

NEUROVASCULAR
STRESS RECEPTOR
Posterior
Anterior
NEUROLYMPHATIC

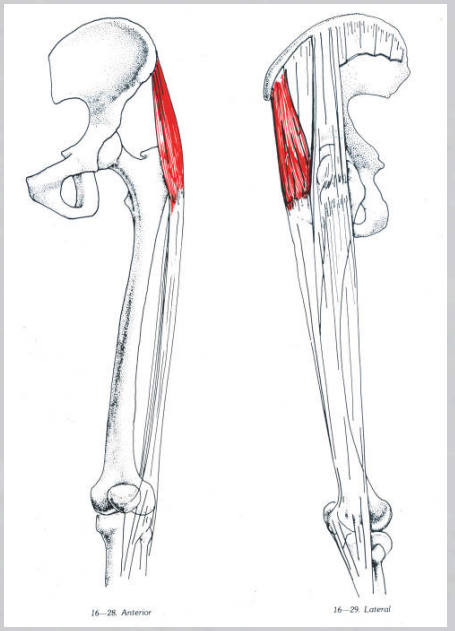

Adductors
Supine

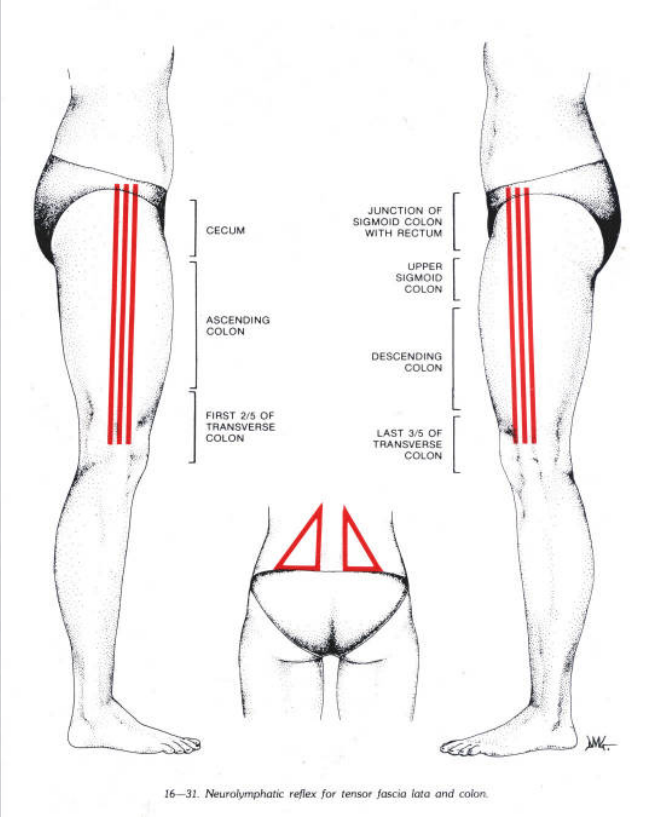

Tensor Fascia Lata —
Thigh in medial rotation,
flexion, and abducted

Tensor Fascia Lata









16—31. Neurolymphatic reflex for tensor fascia lata and colon.

Tensor Fascia Lata

Tensor Fascia Lata



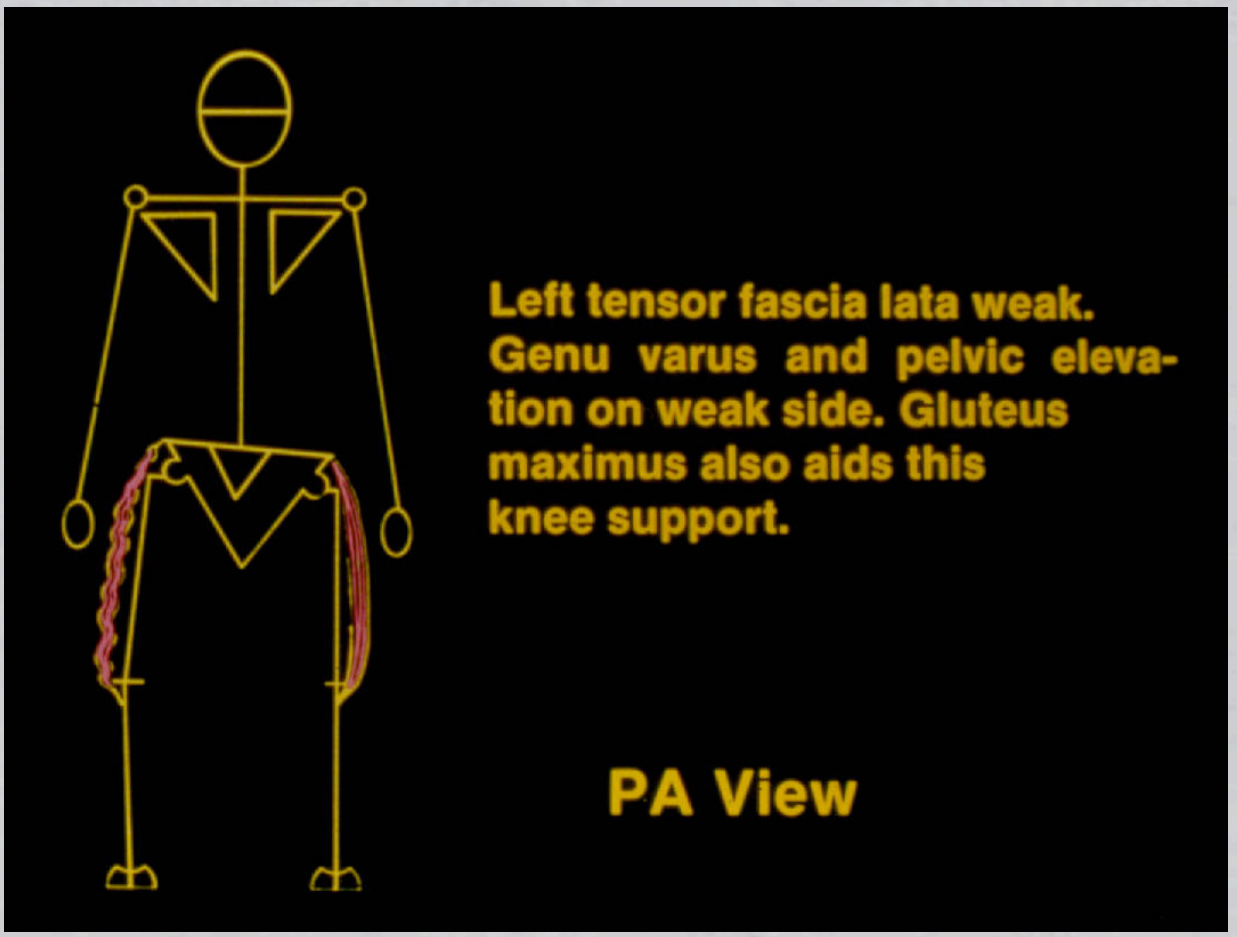
Large Intestine

Large Intestine Meridian

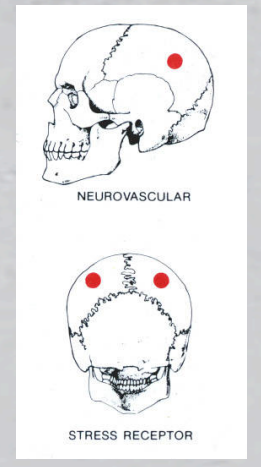
Nerve Supply:
Superior Gluteal,
L4, L5, S1

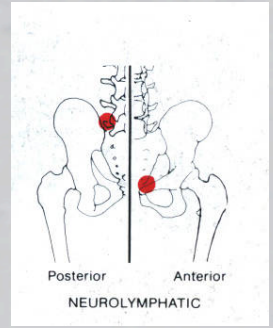
Common Subluxations:
TS Line L4
Assoc. Pt. L4, 5

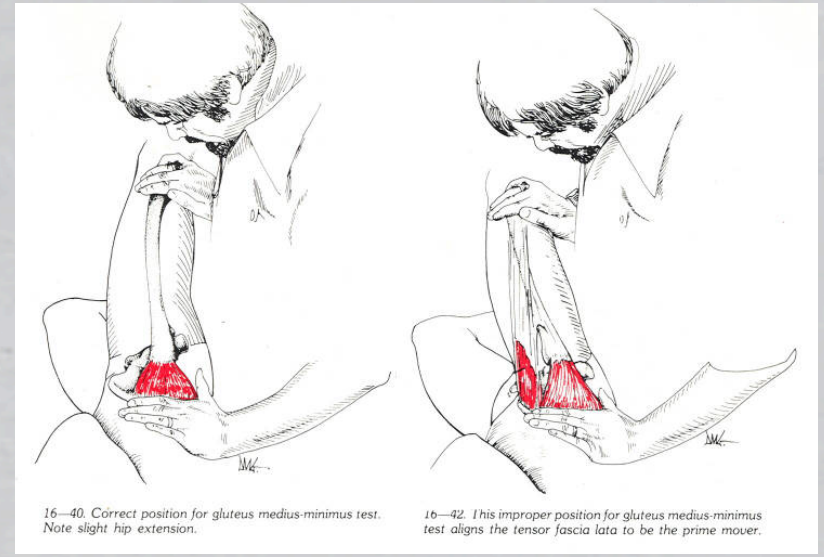
Nutrition:
Acidophilus
Fenugreek
Comfrey
Vitamin D


Left tensor fascia lata weak. Genu varus and pelvic elevation on weak side. Gluteus maximus also aids this knee support.
PA View

Gluteus Medius/ Gluteus Minimus

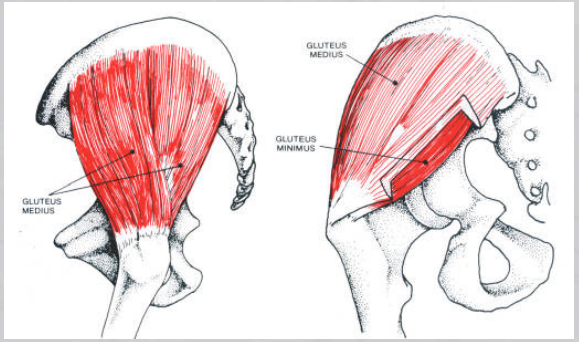






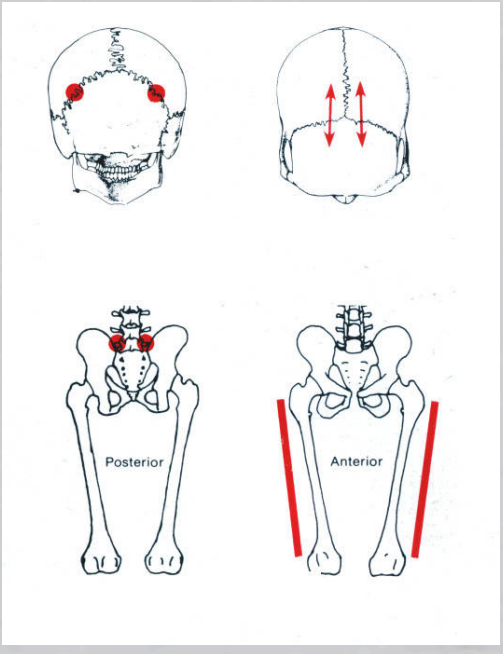
16—40. Correct position for gluteus medius-minimus test. Note slight hip extension.

16—42. This improper position for gluteus medius-minimus test aligns the tensor fascia lata to be the prime mover.

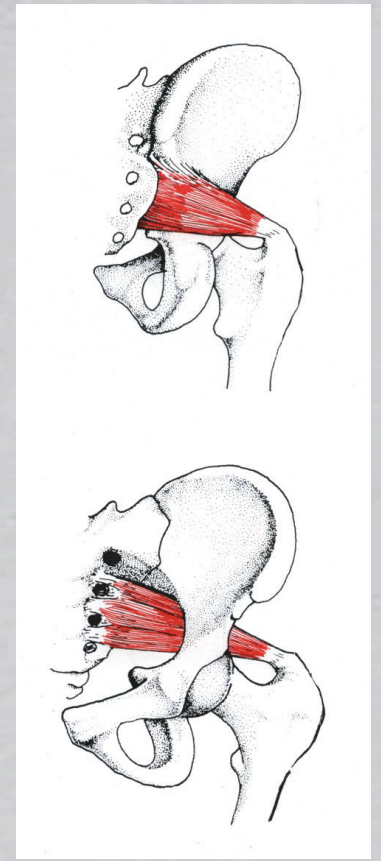


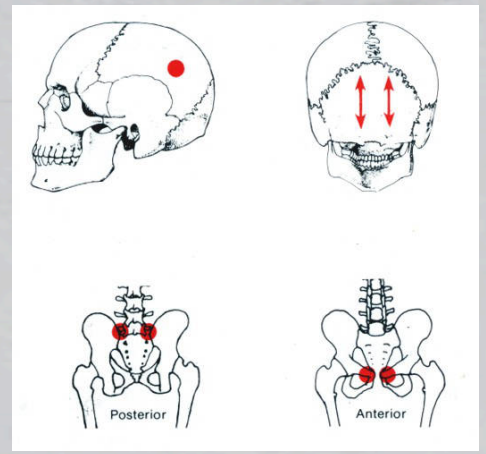
Gluteus Maximus

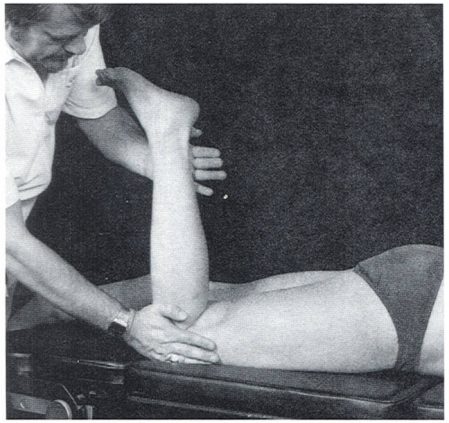




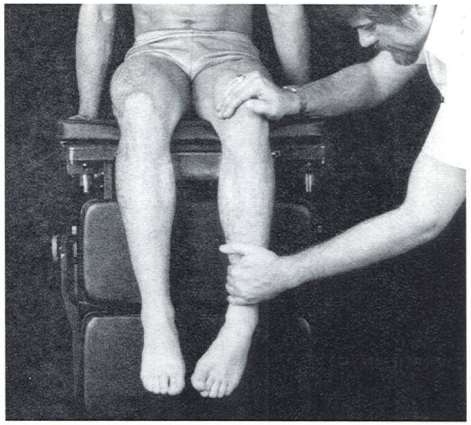
Piriformis



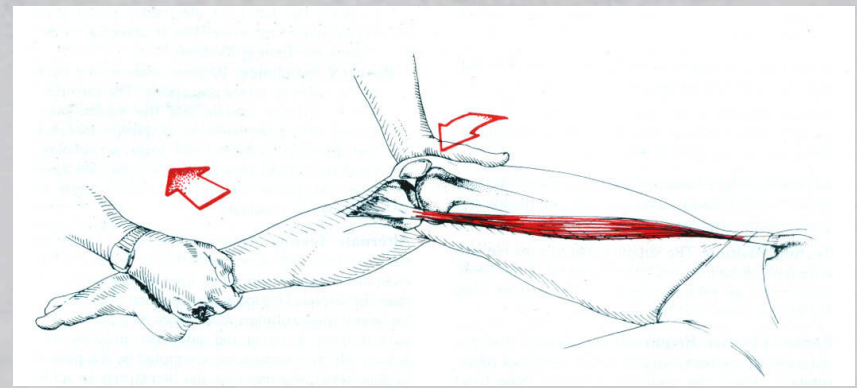


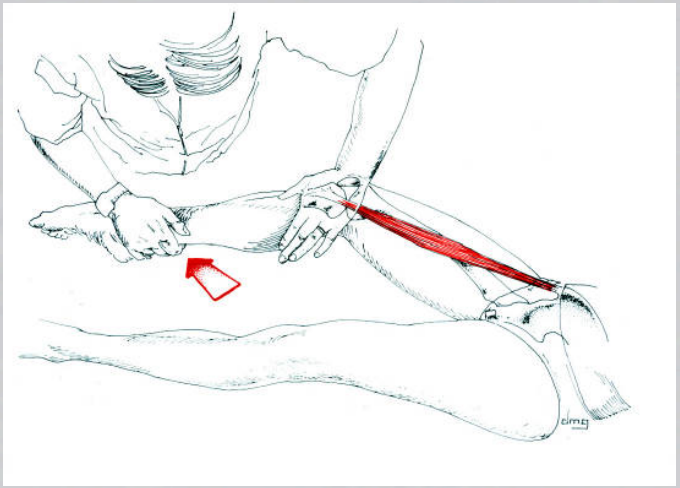


. *Prone piriformis test.*

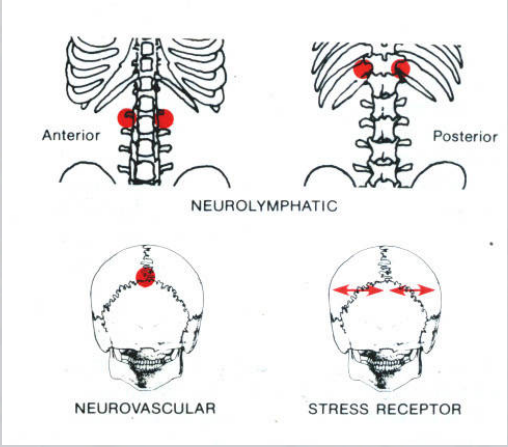


Seated piriformis test.

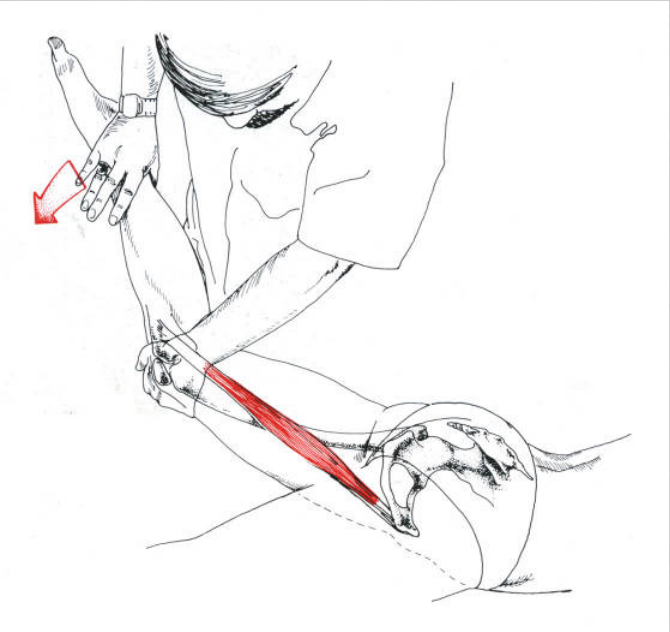


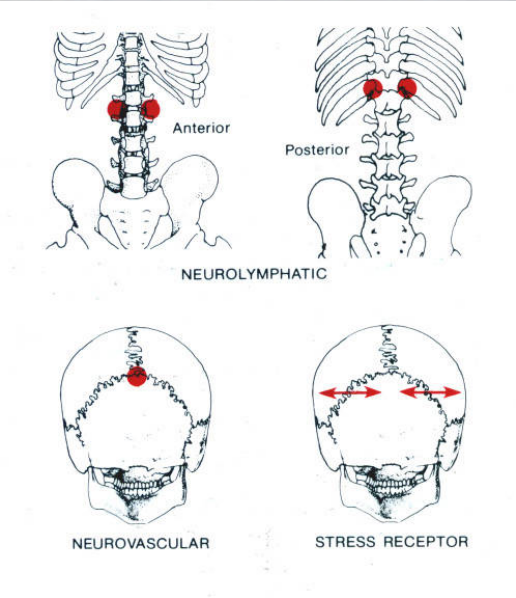


Sartorius

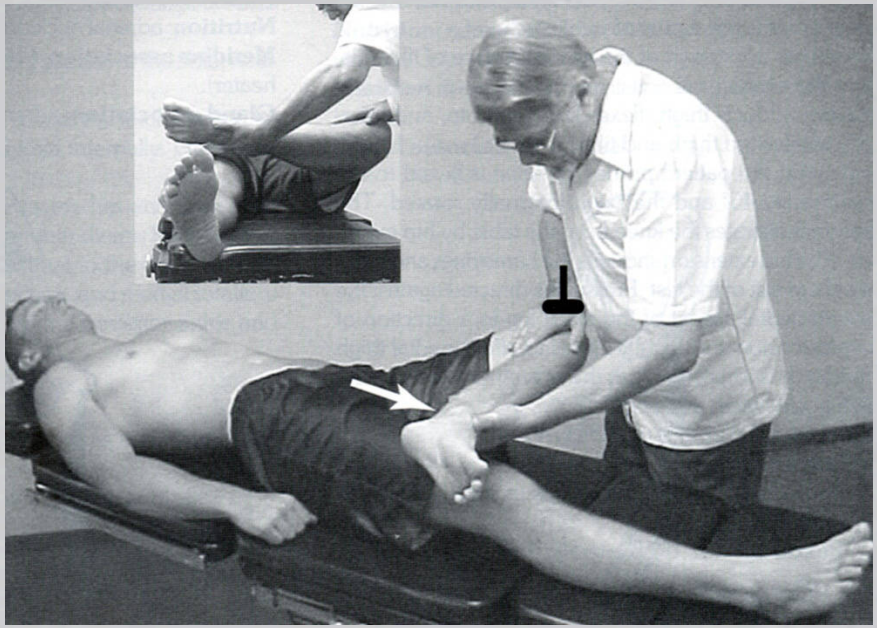

Anterior
Posterior
NEUROLYMPHATIC
NEUROVASCULAR
STRESS RECEPTOR

Gracilis

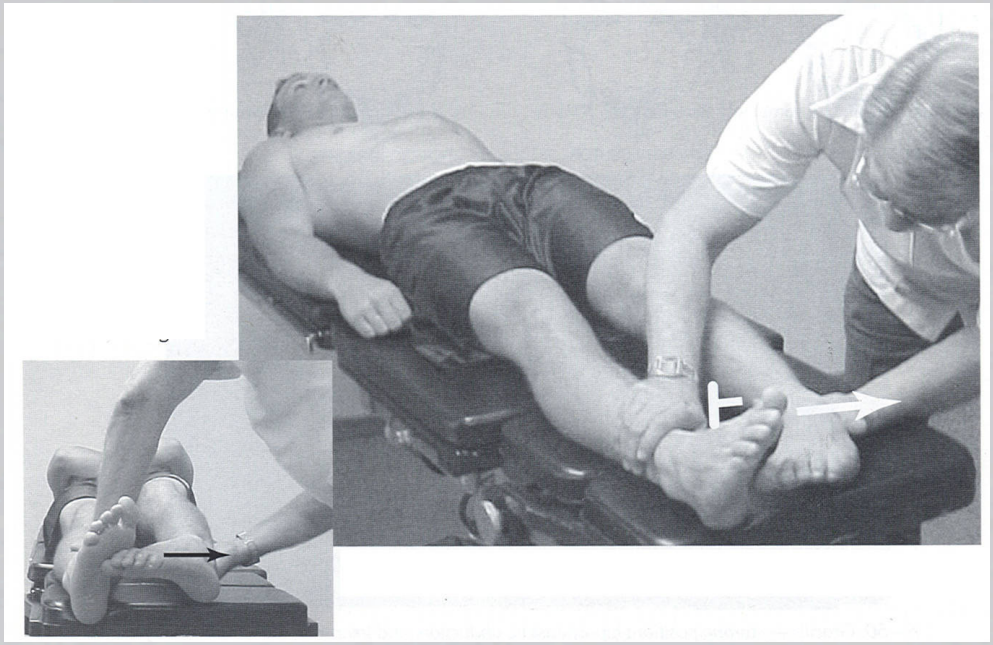



Anterior
Posterior
NEUROLYMPHATIC
NEUROVASCULAR
STRESS RECEPTOR

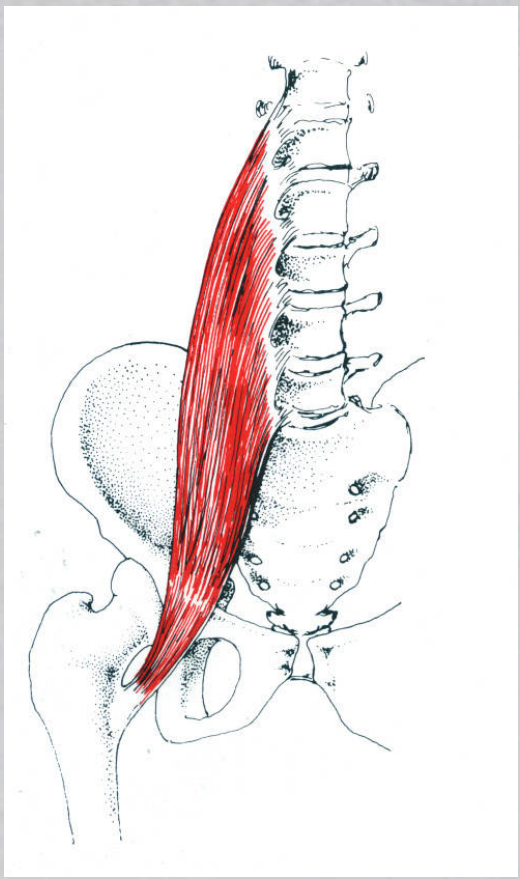
Sartorius Alternative Test

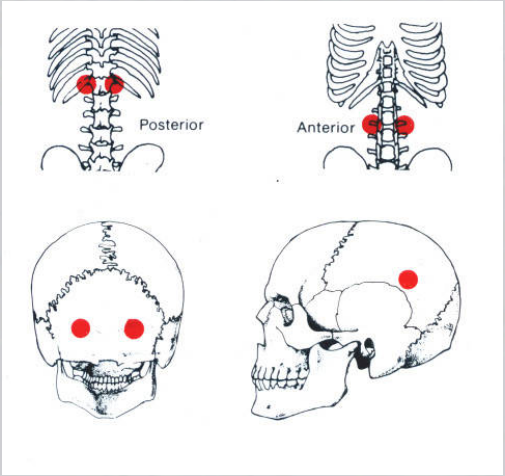


Gracilis Alternative Test

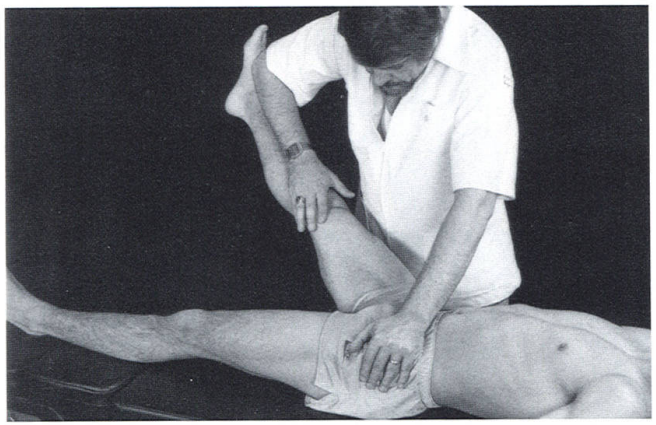


Psoas

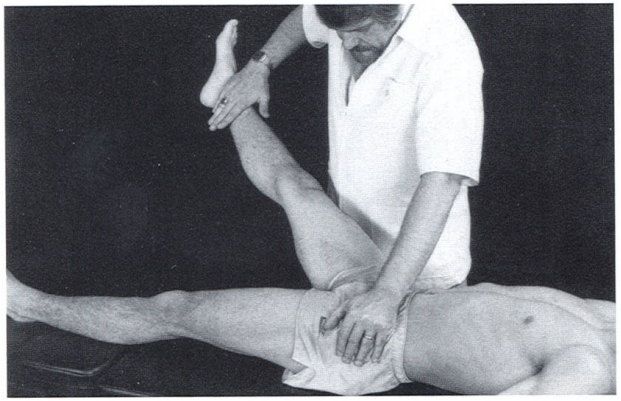




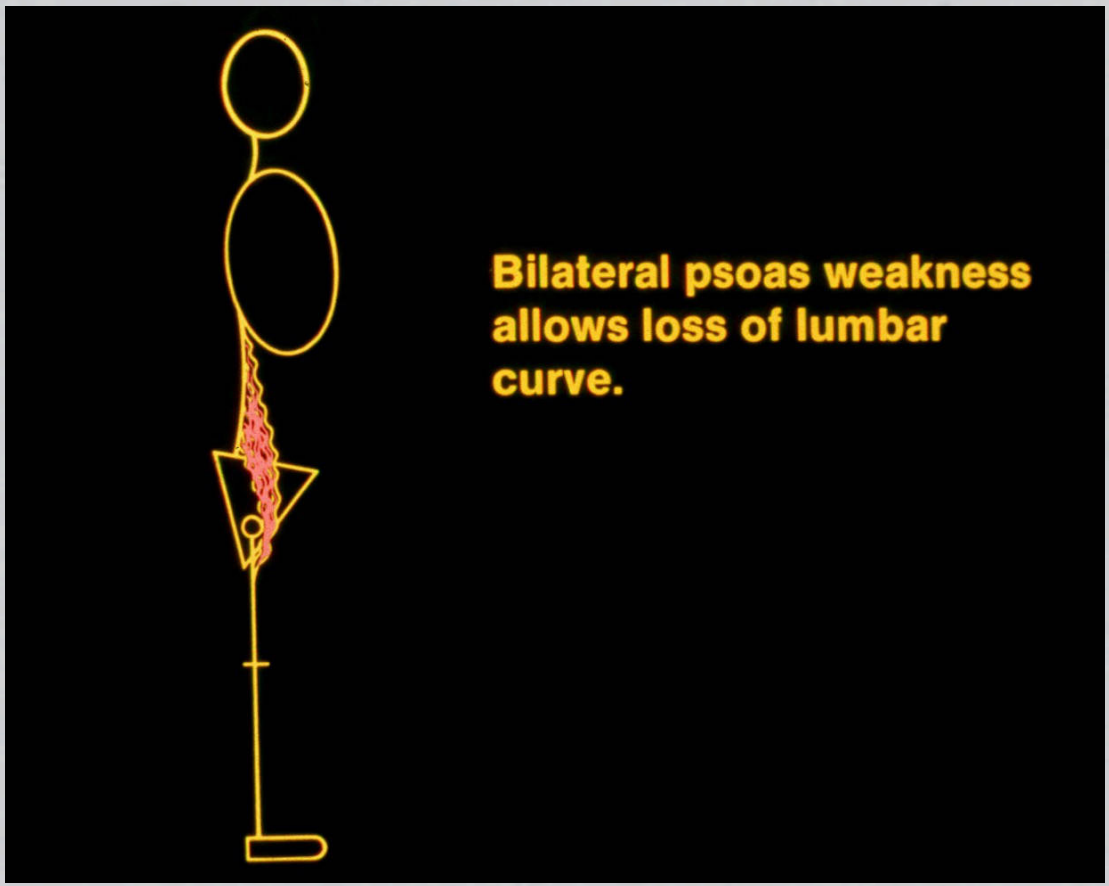
Psoas



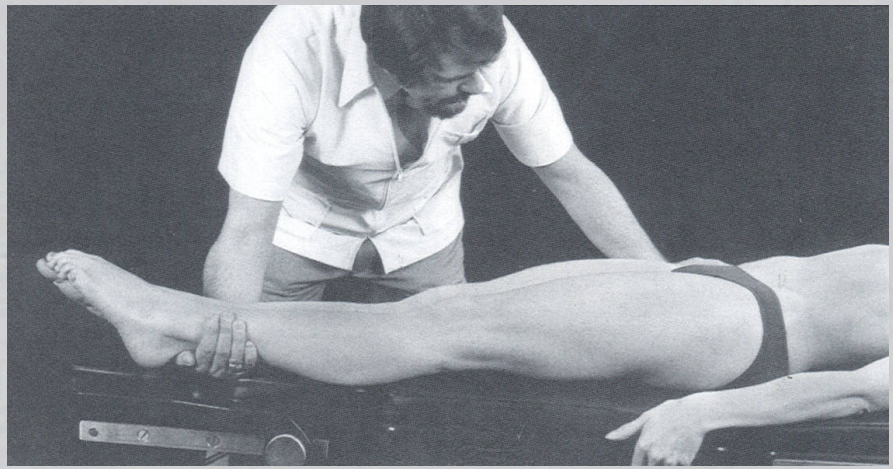
Testing pressure applied over medial condyle of the tibia. This is adequate for most patients, and helps eliminate possibility of accidentally challenging a knee subluxation.

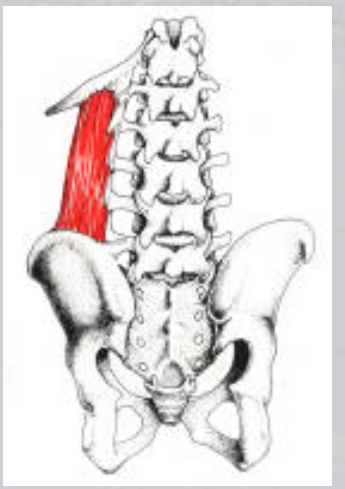


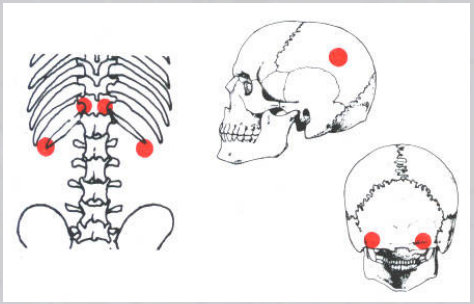
Greater leverage may be needed on very strong patients.


Bilateral psoas weakness
allows loss of lumbar
curve.

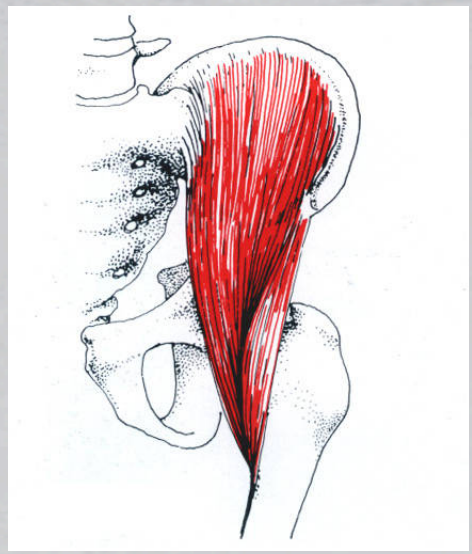
Quadratus Lumborum

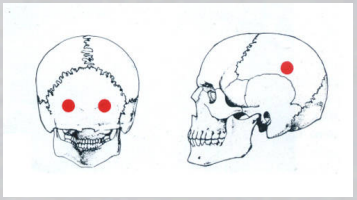


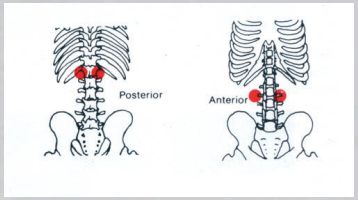




Illiacus

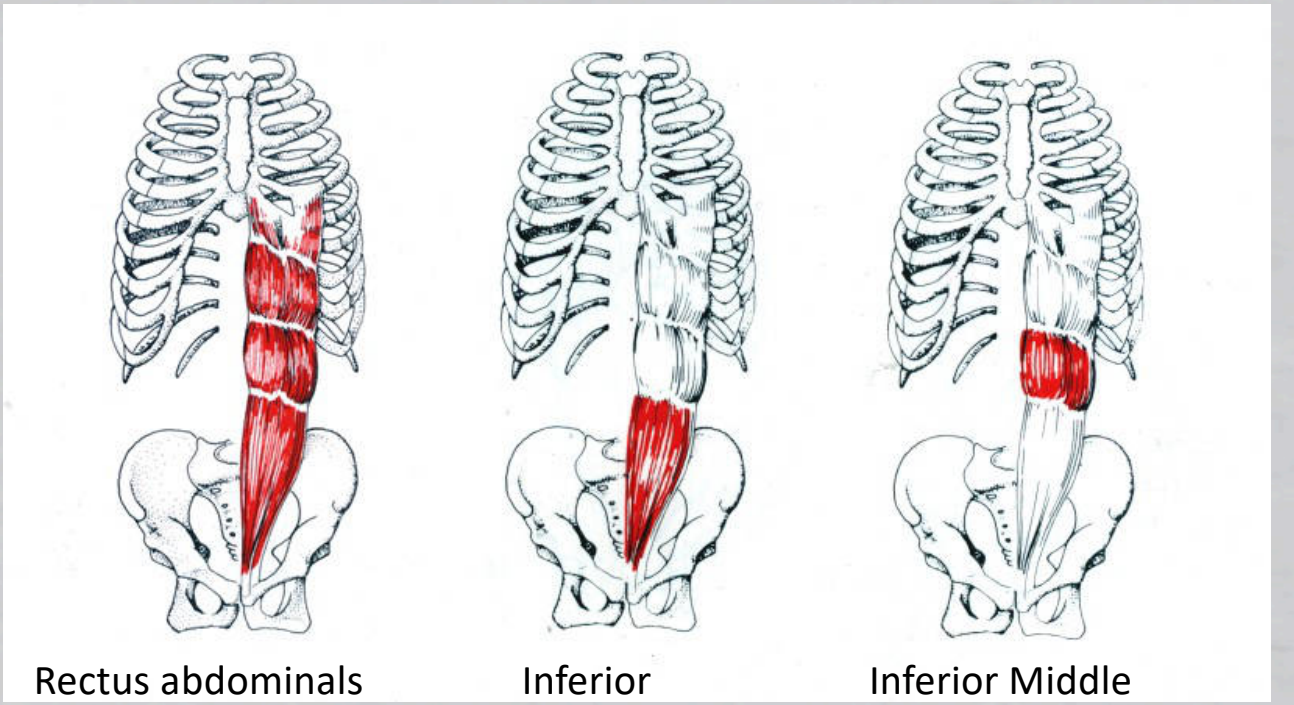






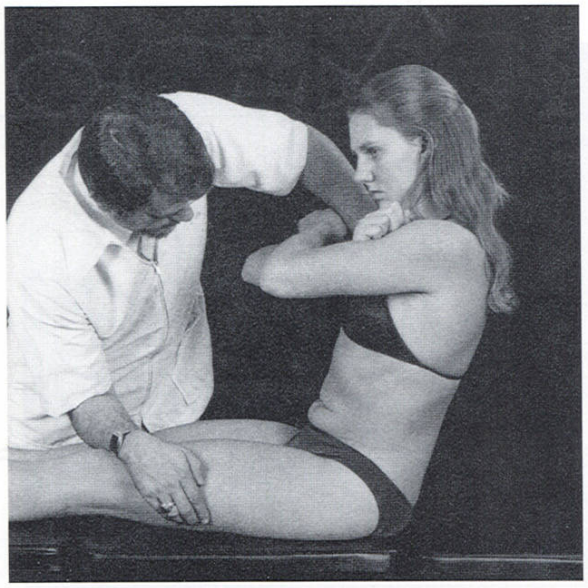


Abdominals

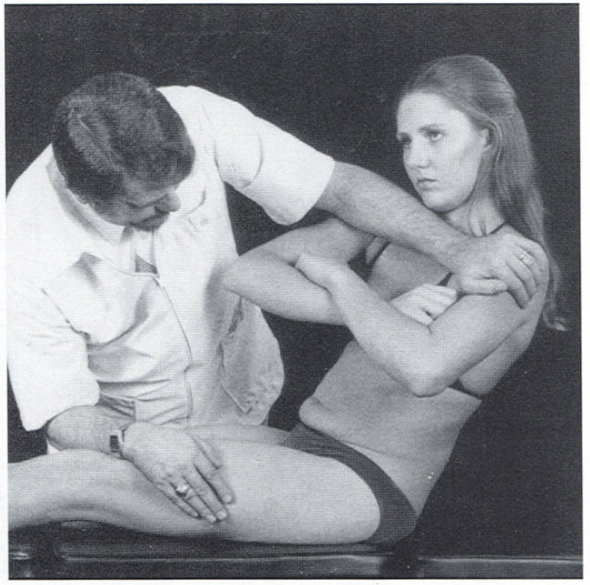


Rectus abdominals Inferior Inferior Middle

Abdominals

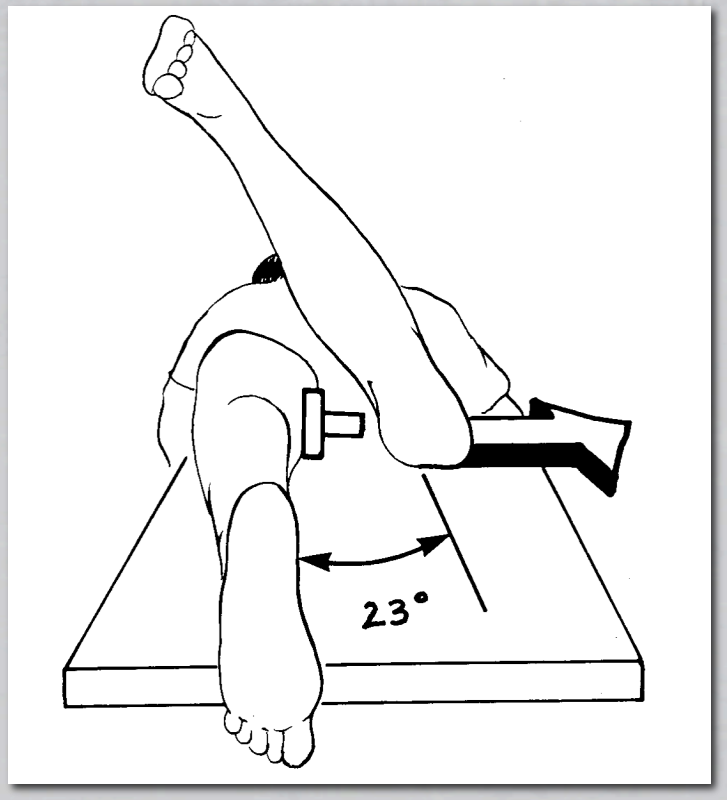


General test for rectus abdominis.

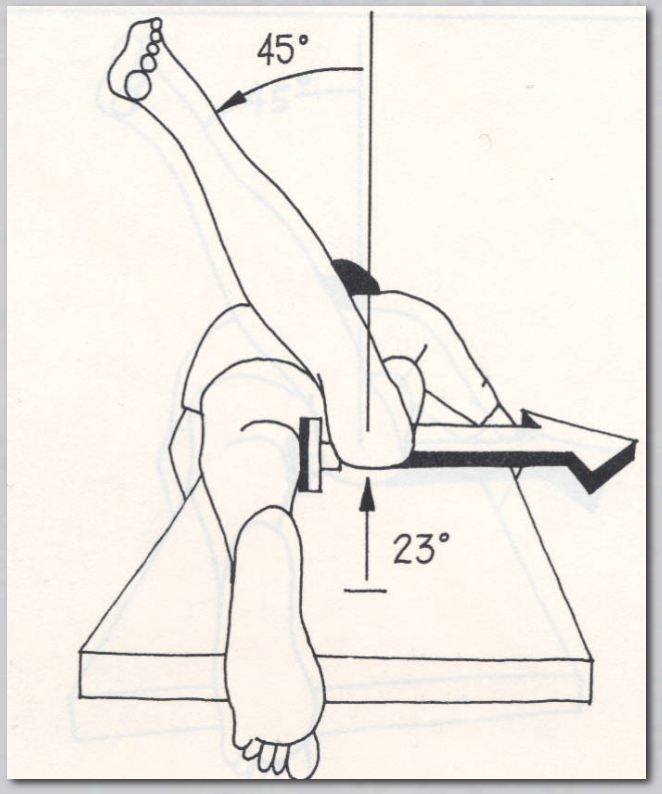


Right external and left internal abdominal muscle test.

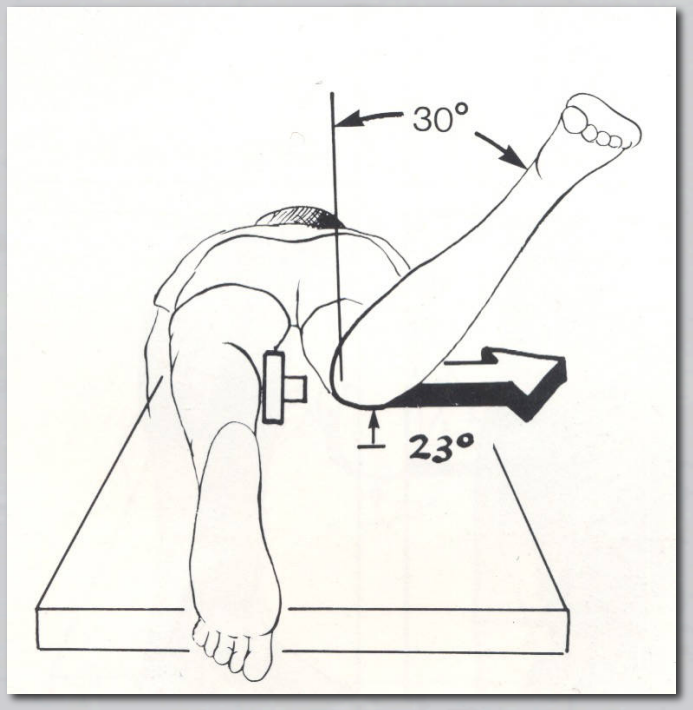
Muscle: Coccygeus, Sacral Division



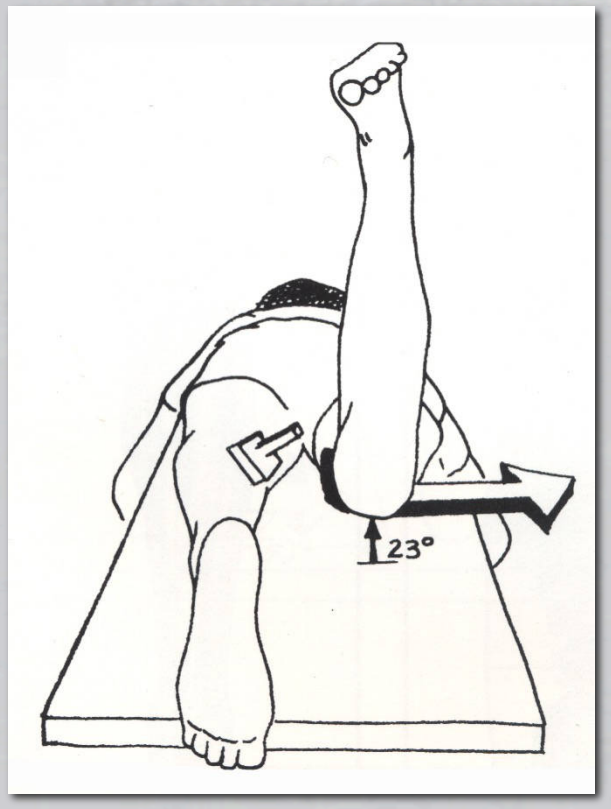
Muscle: Coccygeus, Coccyx Division



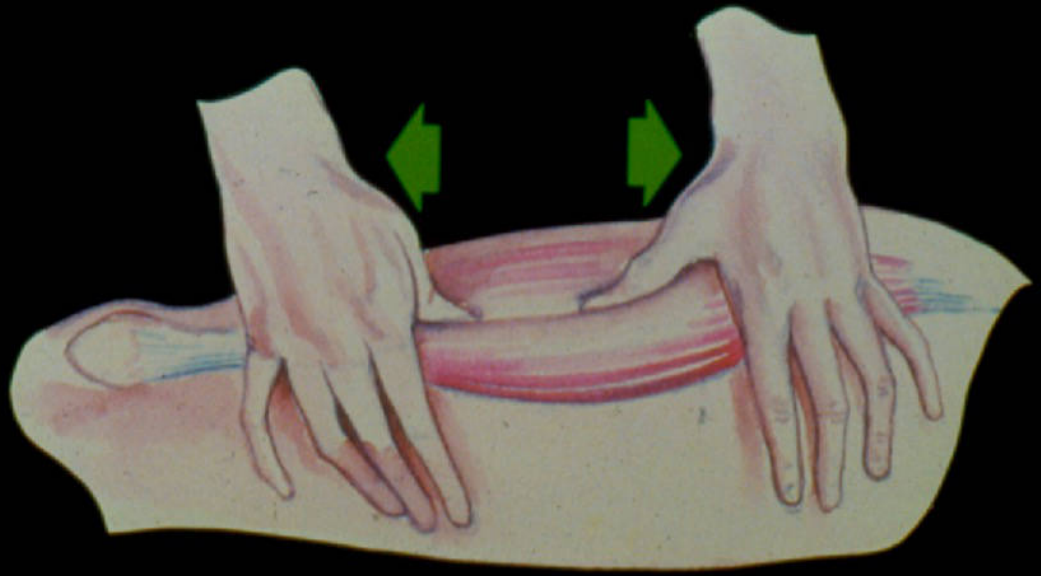
Muscle: Pubococcygeus



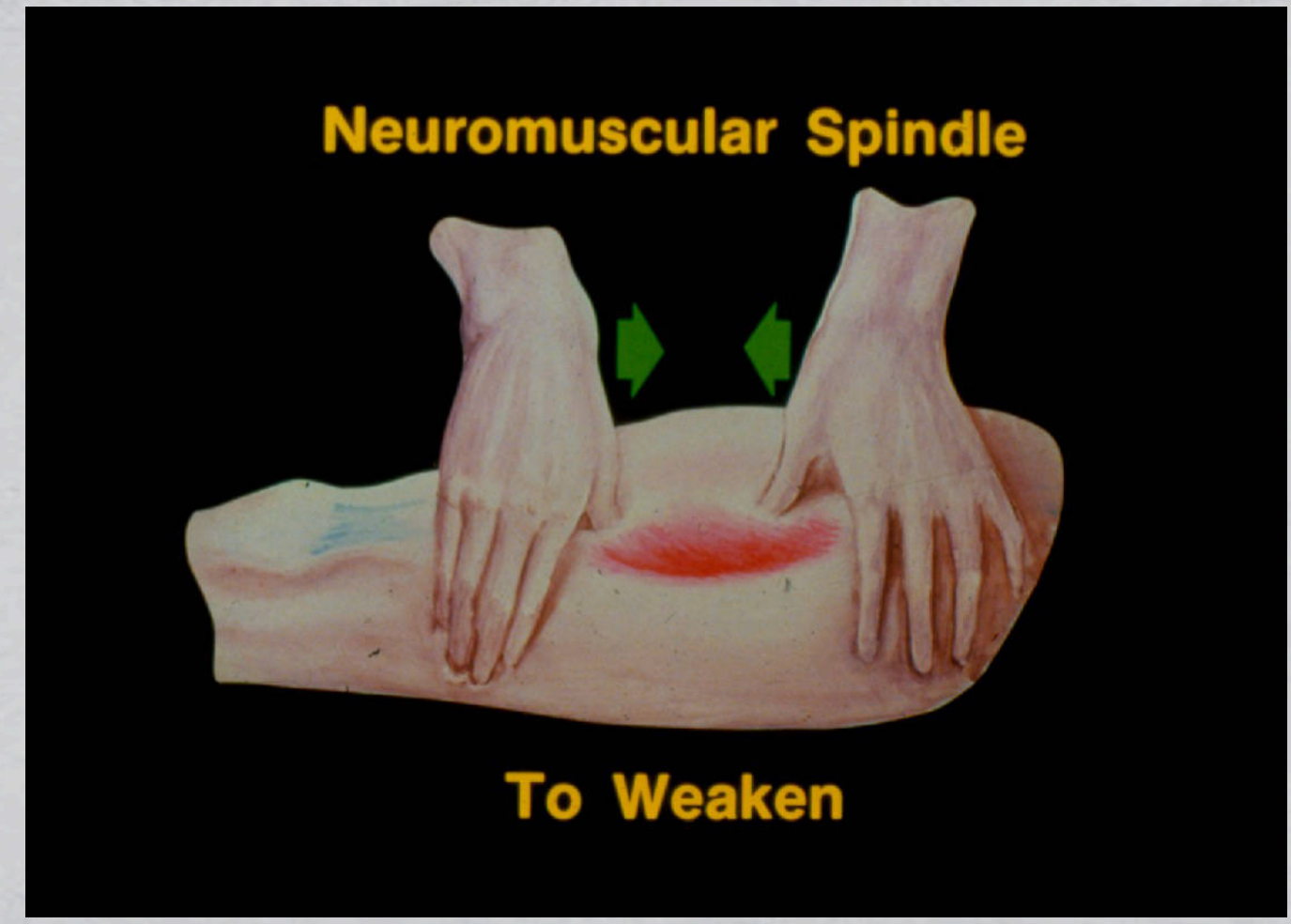
Muscle: Ileococcygeus



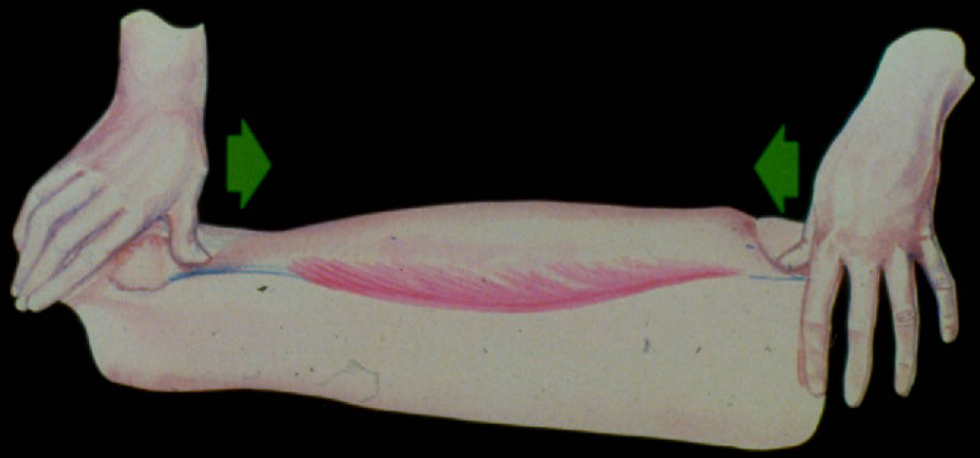
Neuromuscular Spindle



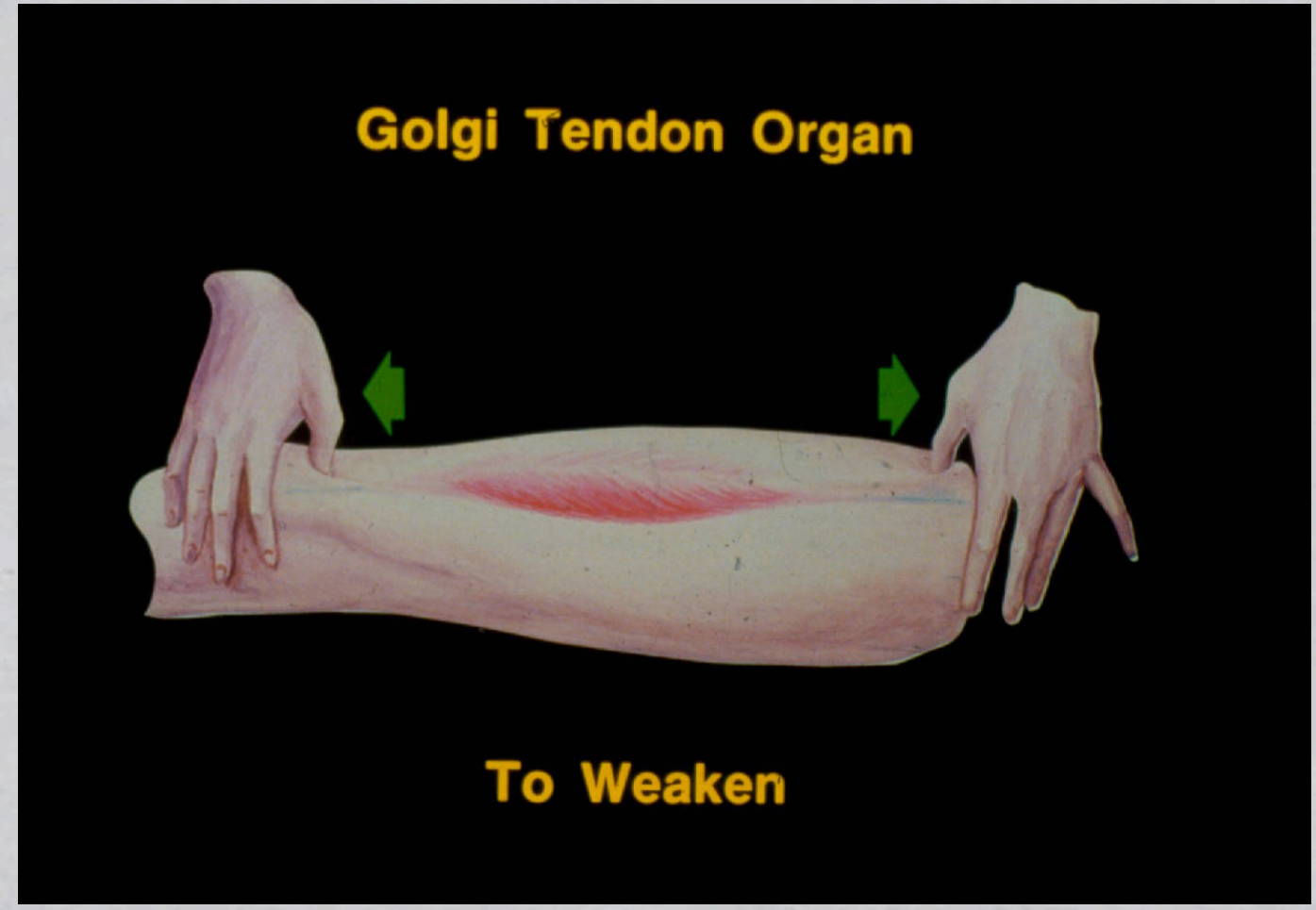
To Strengthen

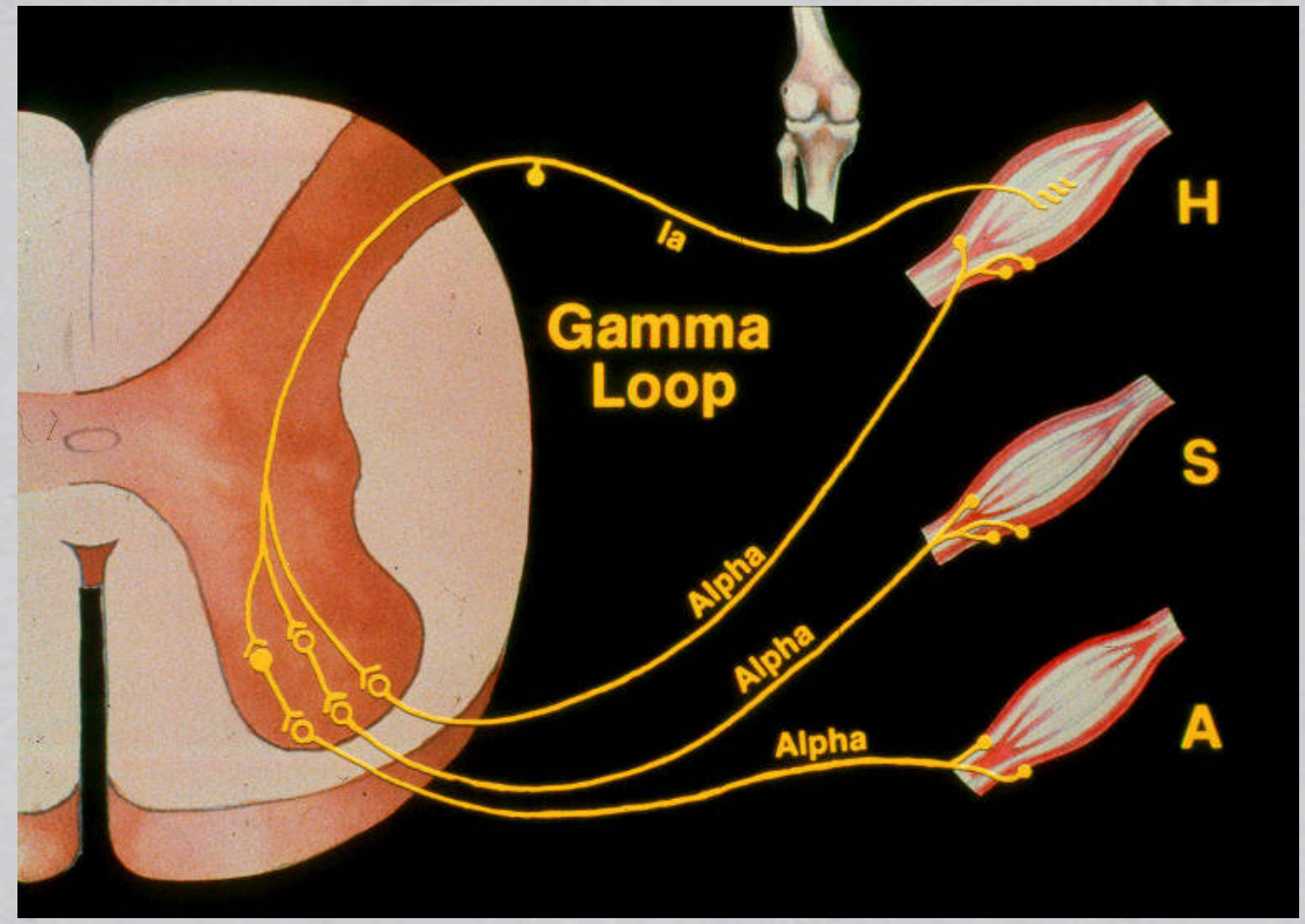

Neuromuscular Spindle
To Weaken

Golgi Tendon Organ



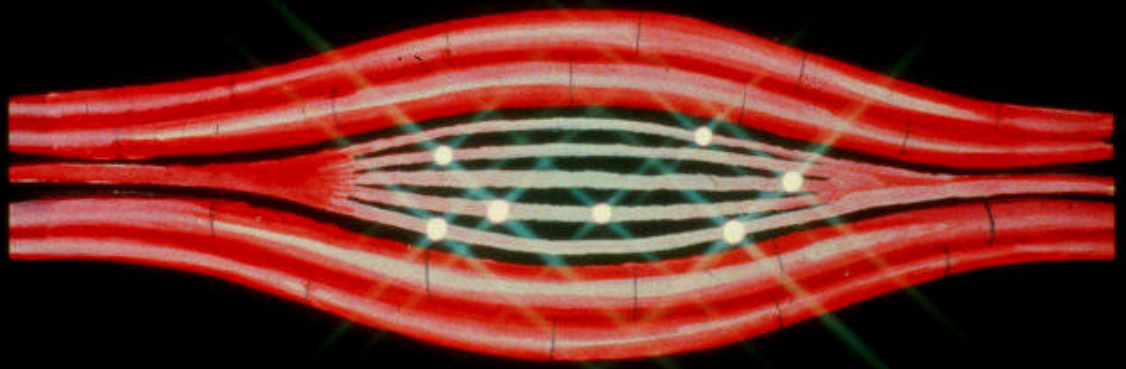
To Strengthen


Golgi Tendon Organ
To Weaken


Ia
Gamma
Loop
H
S
A
Alpha
Alpha
Alpha

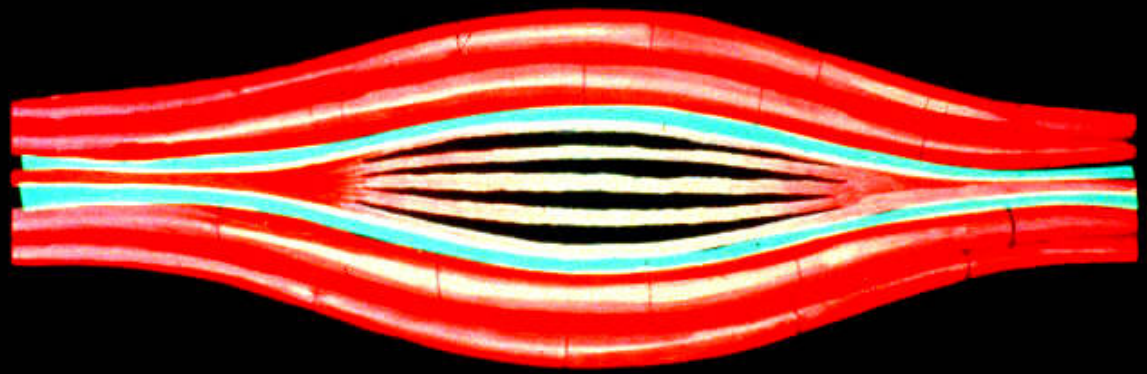


Possible Dysfunction

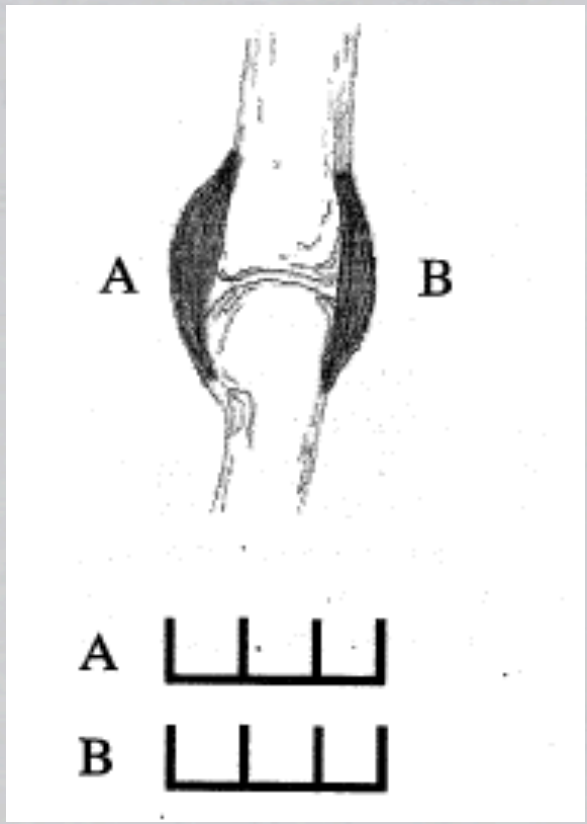


Injury To Intrafusal Fibers

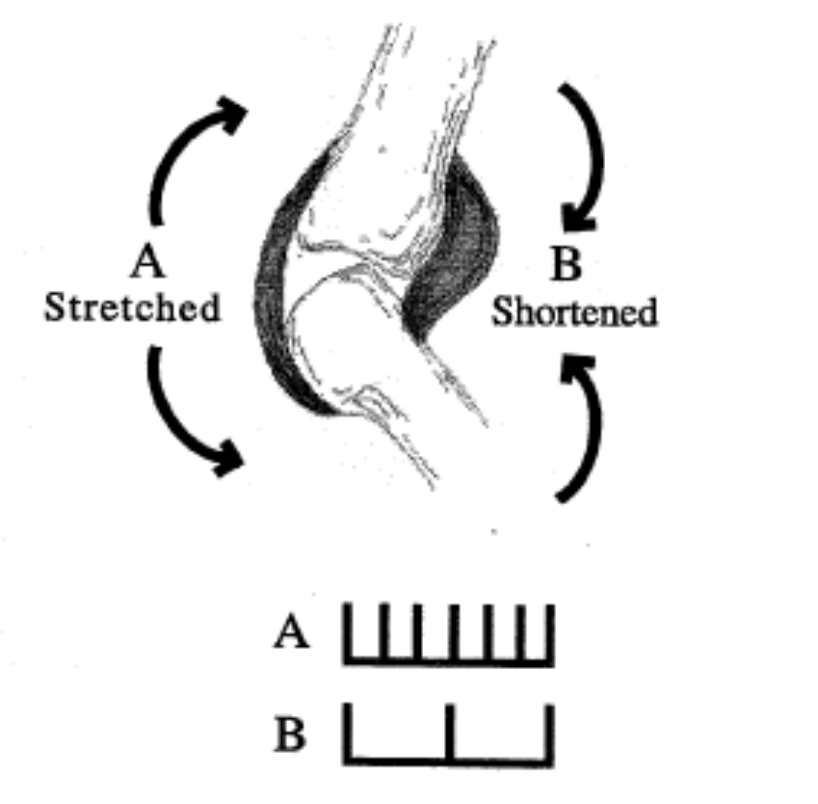
Possible Dysfunction



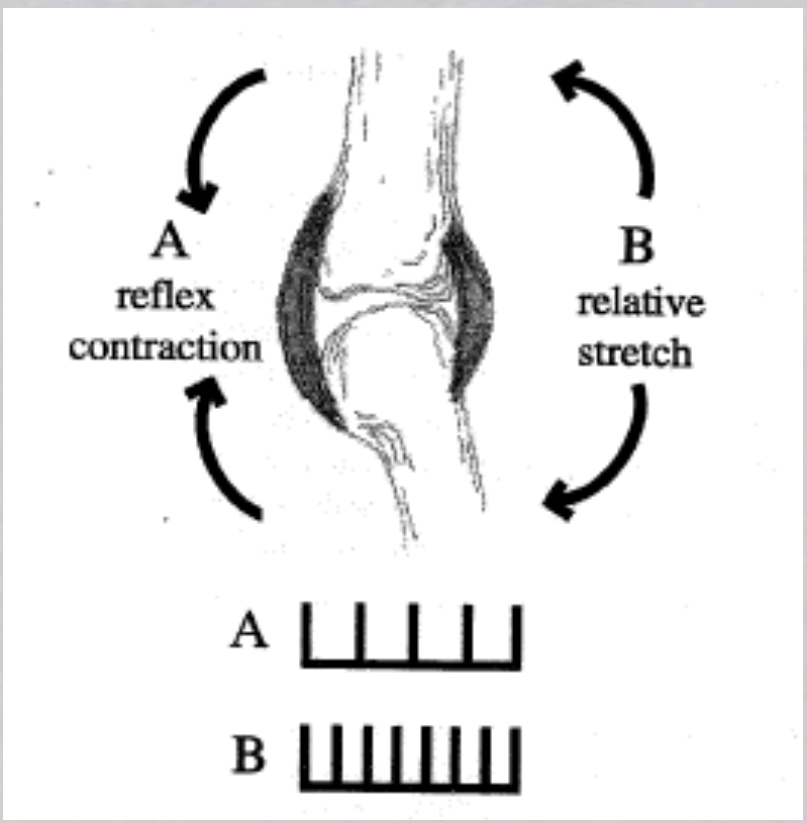
Adhesions of Septa



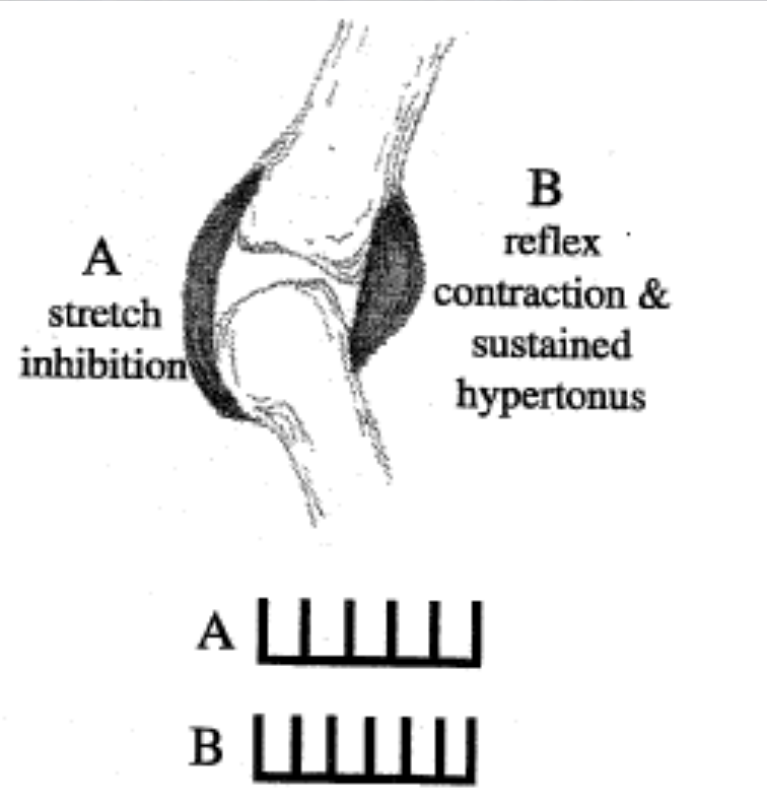
Normal Resting Tone



Strain

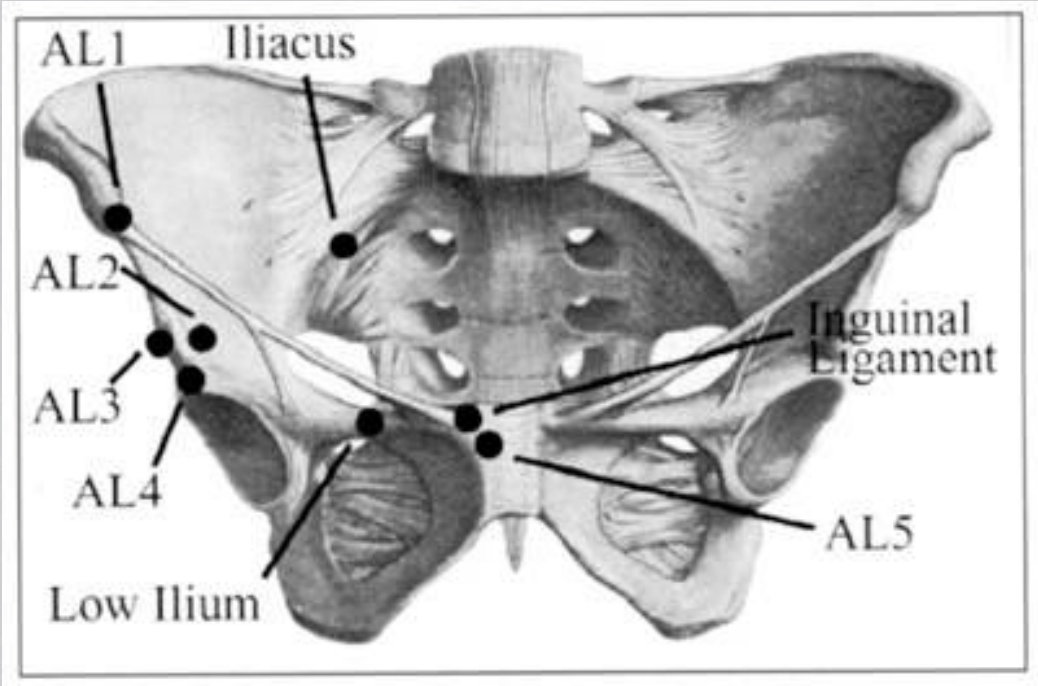


Counterstrain



Dysfunctional Resting Tone

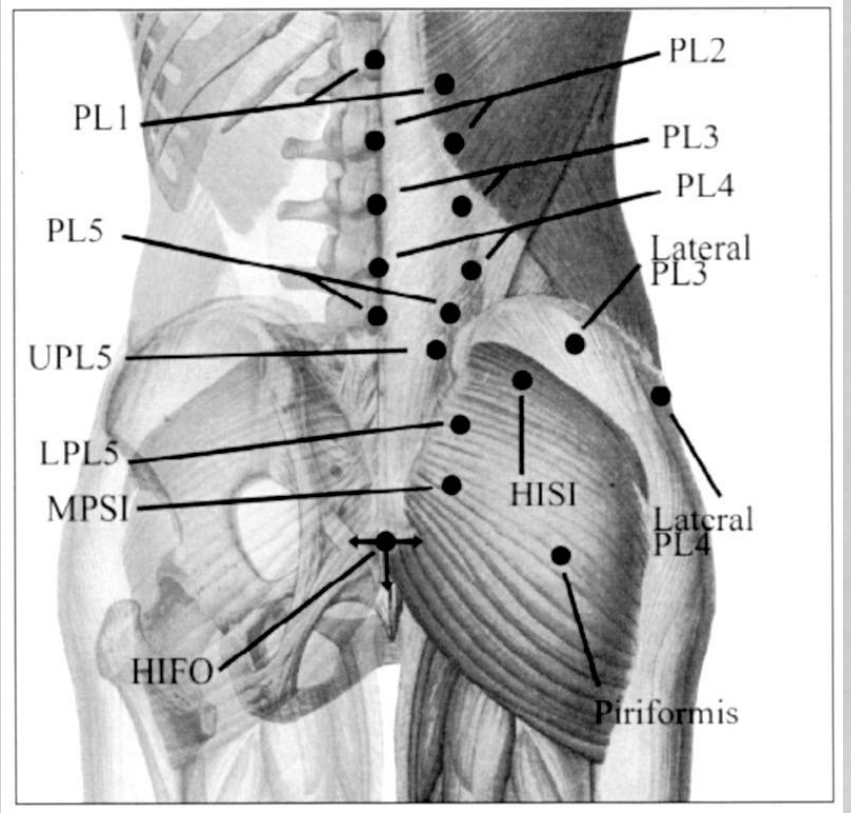
Anterior Lumbar and Pelvic Tender Points



Points for Counterstrain Approaches

Posterior Lumbar and Pelvic Tender Points

Points for Counterstrain Approaches



Counterstrain

Considers the dysfunction to be a continuing, *inappropriate strain reflex*, which is inhibited by applying a position of mild strain in the direction *exactly opposite* to that of the false strain reflex.

This is accomplished by use of the specific point of tenderness related to this dysfunction, followed by specific directed positioning to therapeutic response.

Counterstrain Procedure

- **Identify tender point**
- **Find a passive patient position that markedly reduces the tenderness.**
- **Use flexion if on the front of body, extension if on the back, lateral bending if on the side. Rotation, compression or distraction will vary with each case. Fine tune your position.**
- **Monitor the tissue over the tender point *without* applying pressure for 90 seconds.**
- **Feel for a release in the tissue *(i.e., heat, softening, change in patient's respiration)***
- **Retest by pressing into the original tender point.**
- **Pain should be decreased and function improved.**

Strain-Counterstrain

Treatment Of AL5 Left

Tender Point on Anterior Pubic Bone Left Side

VERY COMMON:
“I can’t straighten-up.”



Strain-Counterstrain

Treatment Of AL2 Right

Tender Point at Right Anterior Inferior Iliac Spine (AIIS)

VERY COMMON: Of AL1-AL4



Strain-Counterstrain

Treatment Of Left Inguinal Ligament Point

Tender Point at Medial Attachment of Left Inguinal Ligament



Strain-Counterstrain

Tender Point in Right Adductor Muscle



Strain-Counterstrain

Treatment Of Right Adductor Point



Strain-Counterstrain

Treatment Of Posterior Lumbar TPs



Strain-Counterstrain

PL5 Treatment (Posterior Lumbar)

Tender Point at Superior Medial Edge of PSIS

Lift leg just below knee.



Strain-Counterstrain

Treatment Of Right PL4



Strain-Counterstrain

Treatment Of Right PL3



Strain-Counterstrain



Posterior Lumbar Transverse Process (TP)



Treatment Of Posterior Lumbar Spinous And Medial TPs

Strain-Counterstrain

Treatment Of Lateral TP Tender Points

Good for Quadratus Lumborum



Strain-Counterstrain

Treatment Of High Ilium With Flare-Out Left

Good for Coccydynia



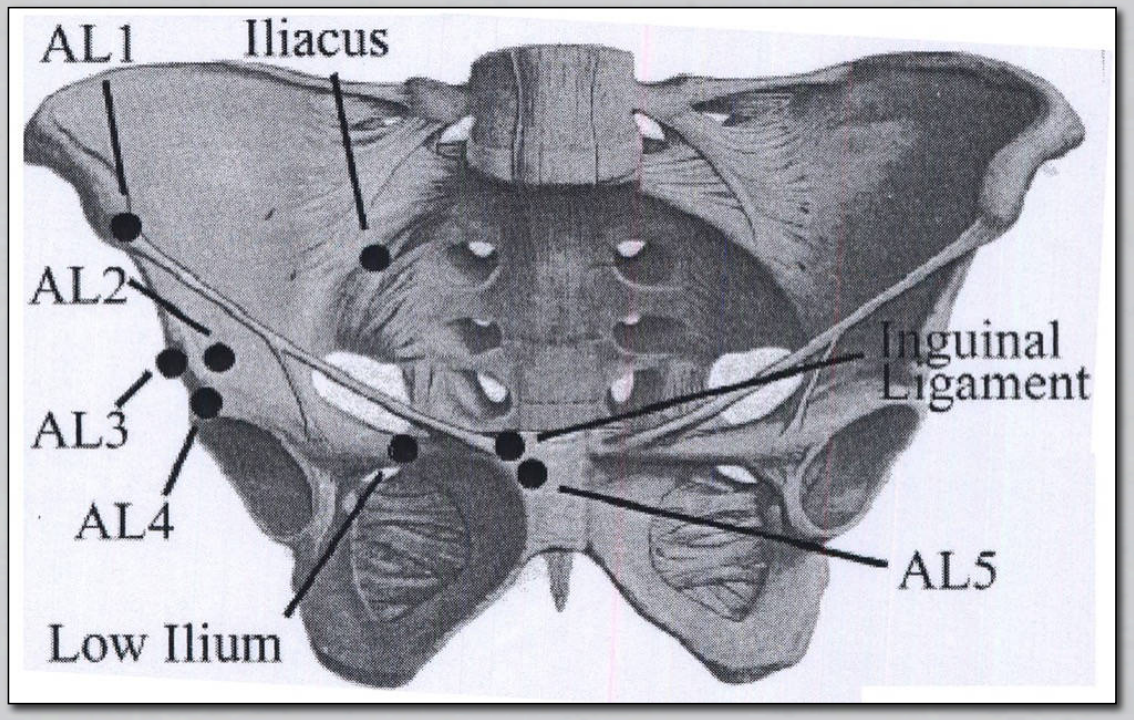
Strain-Counterstrain

Treatment Of Piriformis

Knee/Hip Flexion with Abduction and External Rotation of Hip



Anterior Lumbar and Pelvic Tender Points





AL1

Tender Point: ASIS

Approach medially, 3/4” deep

Tx:

Patient supine. Practitioner stands on the same side as the dysfunction, inducing flexion to the level of the dysfunction. Place several pillows under hips of the patient to obtain additional flexion of pelvis on lumbar spine. Rest patient's flexed legs on practitioner’s thigh, or as in photo. Flexion - moderate to marked, Sidebend & Rotate-away (patient's knees towards away)



AL2-4

Tender Points:

AL2- Medial surface of anterior iliac spine

AL3- Lateral surface of anterior iliac spine

AL4- Inferior to anterior inferior iliac spine

Slightly below AL3 tender point

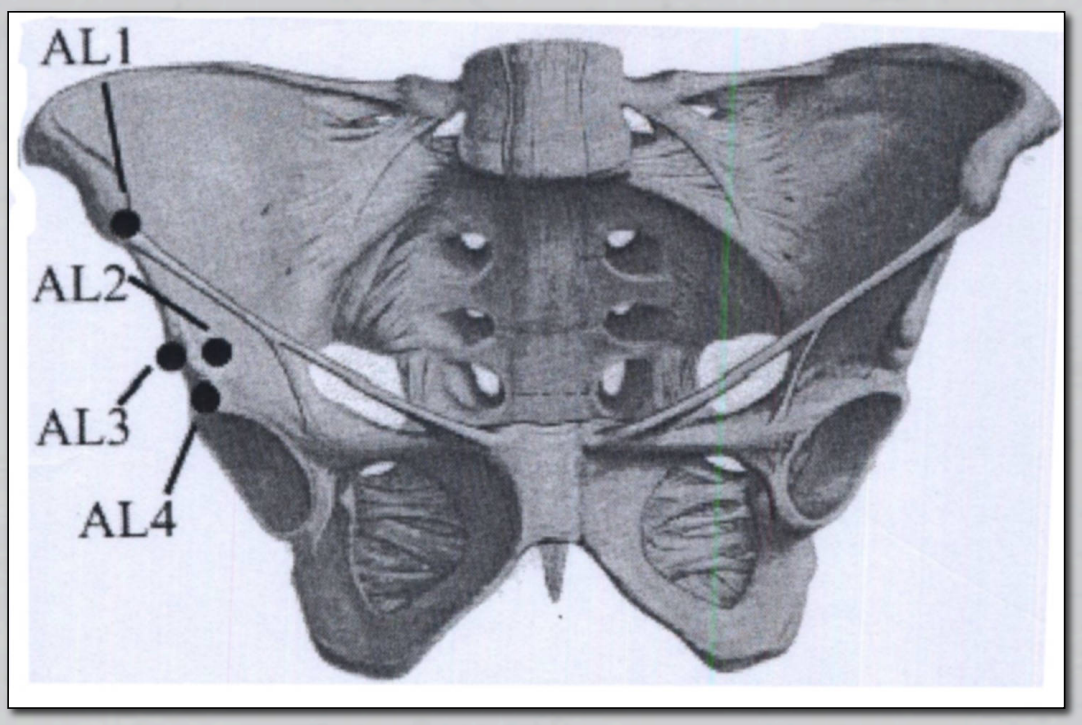
Tx:

Patient Supine. Practitioner stands on opposite side of the dysfunction.

Note: motions introduced are relative to the spinal level being treated.

Flexion - patient's legs flexed 90°, Sidebend - away slightly to moderate, more for lower levels (patient's hip on side of tender point inferior). Rotate- toward markedly (Pt's knees towards Practitoner)

Tender points for AL1-4



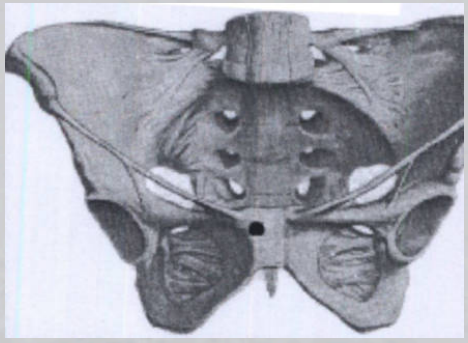


AL5

Tender Point:
Anterior Superior aspect of Pubic bone, 1 cm lateral to Symphysis Pubis

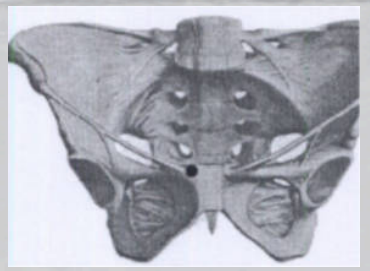
Tx:

Patient Supine. Practitioner stands on same side as tender point.
Flexion - marked
Sidebend - away (patient's opposite hip move superiorly)
Rotate - away (patient's knees towards Practitioner)





Inguinal Ligament



Tender Point:

Superior surface of Pubic bone near the Inguinal Ligament attachment.

Tx:

Patient Supine. Practitioner stands on same side as tender point.

Flexion - Flex both legs 90° and rest on operator's thigh. Move the leg on the sore side under the opposite leg of Patient. *This produces crossing of the knees and thighs.*

Adduction - of Femur

Rotation - of Femur internally, by moving patient's ipsilateral lower leg laterally (towards Practitioner)

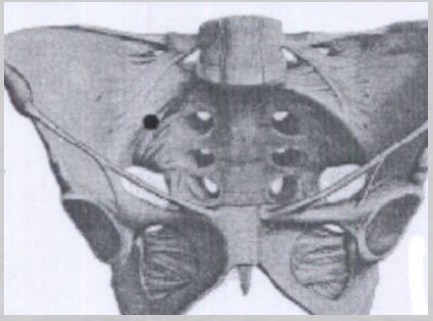


Iliacus

Tender Point:
Anterior and deep in Iliac Fossa.

Tx:

Patient Supine
Pillow can be placed under buttocks to raise pelvis, increasing flexion.
Bilateral Hip Flexion - extreme
Bilateral Hip Rotation - extreme external

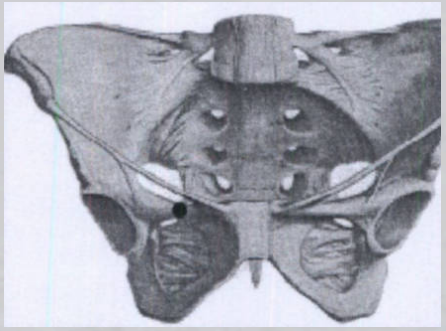


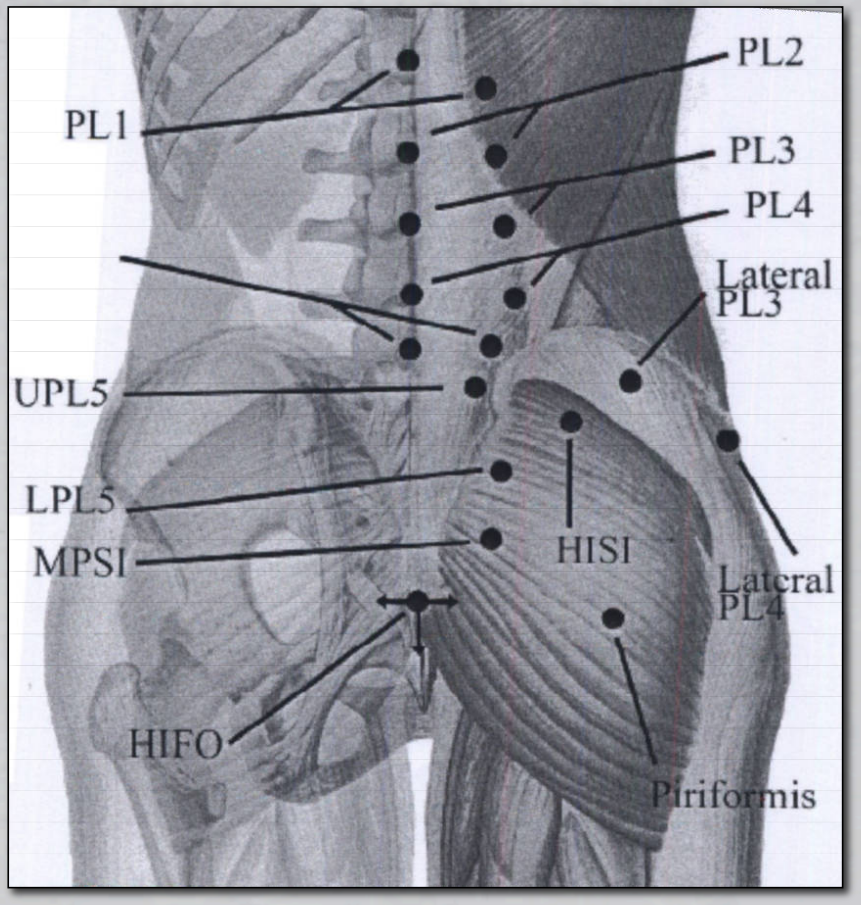


Low Ilium (Sacroiliac)

Tender Point:
Lateral Ramus of Pubic Bone
on anterior surface.

Tx:
Patient Supine
Flexion-of thigh on sore side,
usually to 90°
Abduction - sometimes needed
Sidebend - none.
Rotate - none.





Posterior Lumbar & Pelvic Tender Points

Treatment Position for SP Tender Points



Note: Because of marked extension, rotation goes *above* level of Tender Point. It is therefore in the same direction as leg rotation.

Tx:

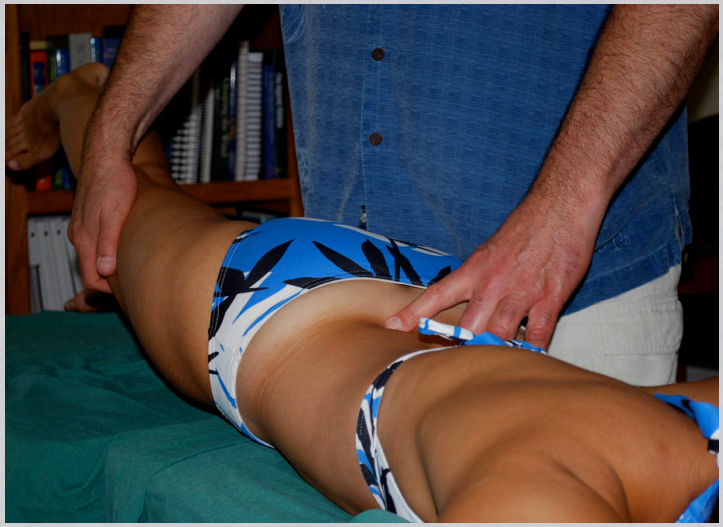
Patient prone, Practitioner on opposite side.

Practitioner lifts Patient's legs together (SP), or contralateral leg (TP) over Practitioner's knee holding Patient's leg above knee.

Extension - moderate to marked, more for upper lumbars

Sidebend - away, move Patient's leg(s) towards Practitioner
Rotate - towards, raise leg up on side opposite Practitioner.

Treatment Position for TP Tender Points



Note: Because of marked extension, rotation goes *above* level of Tender Point. It is therefore in the same direction as leg rotation.

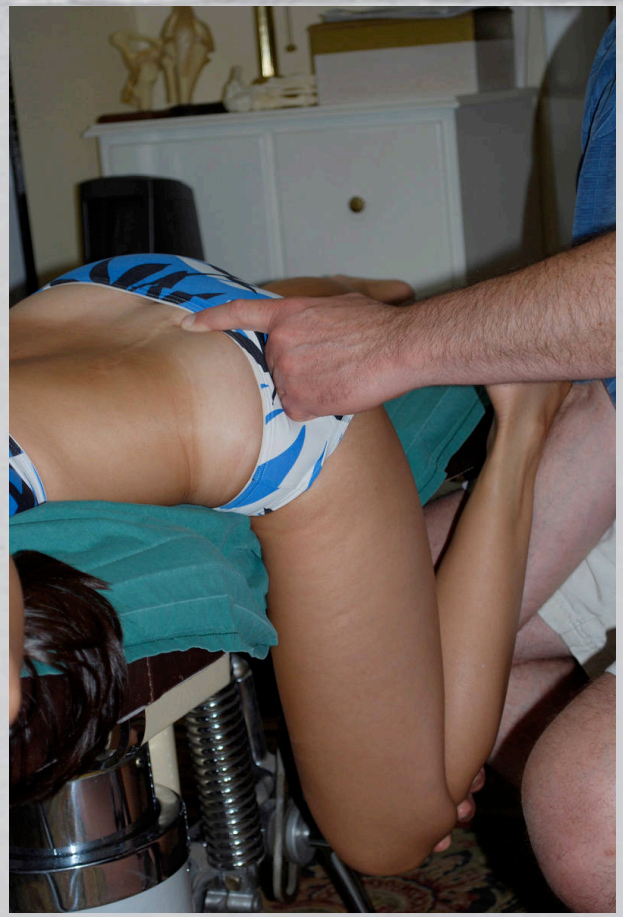
Tx:

Patient prone, Practitioner on opposite side.

Practitioner lifts Patient's legs together (SP), or contralateral leg (TP), over Practitioner's knee, holding Patient's leg above knee.

Extension - moderate to marked, more for upper lumbars

Sidebend - away, move Patient's leg(s) towards Practitioner.
Rotate - towards, raise leg up on side opposite Practitioner.



LPL5 (Lower Pole)

Tender Point:

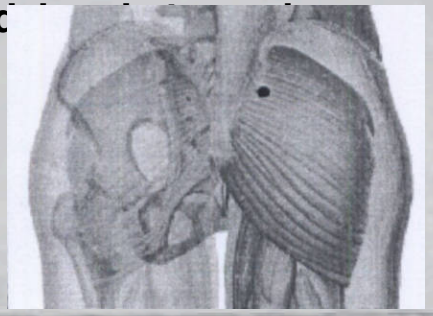
1 cm below PSIS in small saddle between PSIS and PIIS. Also on Spinous Process of L5.

Tx:

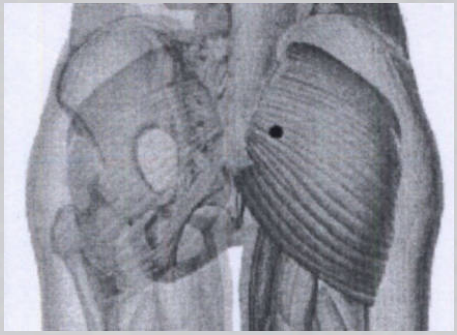
Patient prone. Practitioner seated on side of dysfunction. Leg on sore side is dropped off of table, resting on Practitioner's thigh. Patient's thigh flexed 90°. Patient's pelvis is rotated away and the knee is adducted slightly.

Flexion - 90°, Sid

Rotate - toward.







Mid-Pole Sacroiliac: Ilium Flare In-Superiorly (MPSI)

Tender Point:

3-4 cm caudad to Posterior Superior Iliac Spine in muscle depression lateral to Sacrum. Approach the Tender Point from the side.

Tx:

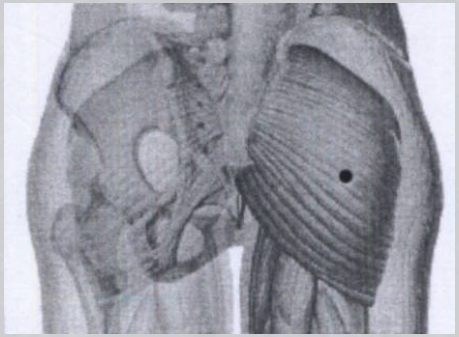
Patient prone

Flexion - slight of hip and knee

Abduction - of leg is major component

Rotation - external of hip





Piriformis (PIR)

Tender Point:

In Piriformis muscle 8-9 cm medial to, and slightly cephalad to the Greater Trochanter.

Tx:

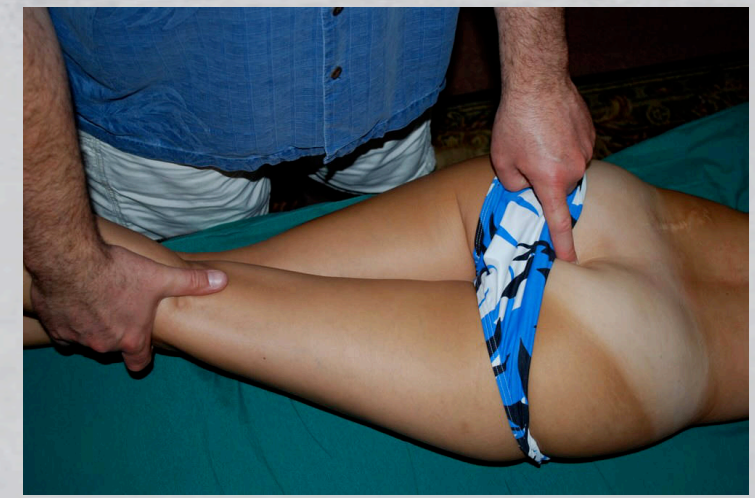
Similar to PL5

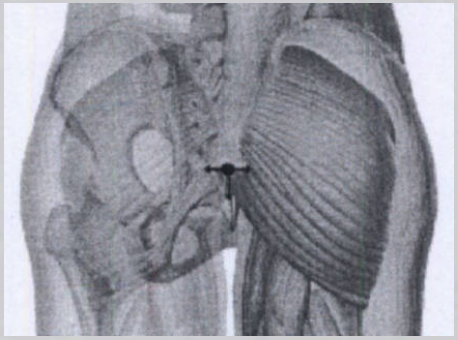
Patient prone. Practitioner is seated on side of Tender Point. Patient's leg is suspended off table with patient's leg resting on Practitioner's thigh.

Flexion - hip 135°

Abduct - knee slightly

Rotation - variable internal or external





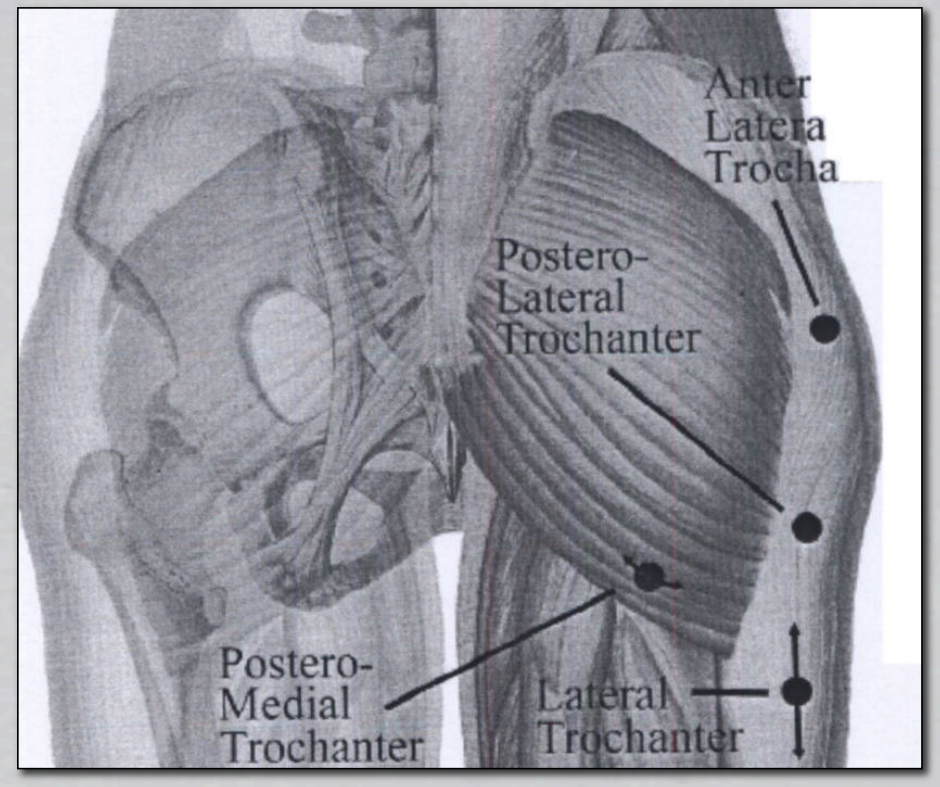
High Ilium Flare Out (HIFO)

Tender Point:

At Sacrococcygeal junction or on Coccyx.

Tx:

Patient prone. Practitioner on opposite side as Tender Point. Raise leg on the sore side high enough to clear opposite leg and adduct, creating scissoring of the legs. Correction is by increasing the high Ilium and the flare out. Occasionally the opposite leg is extended and adducted.



Tender Points of the Hip



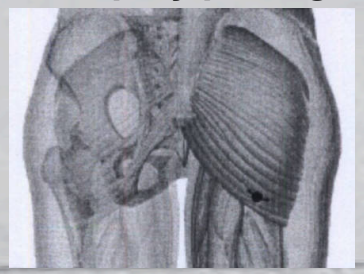
Postero-Medial Trochanter (PMT)

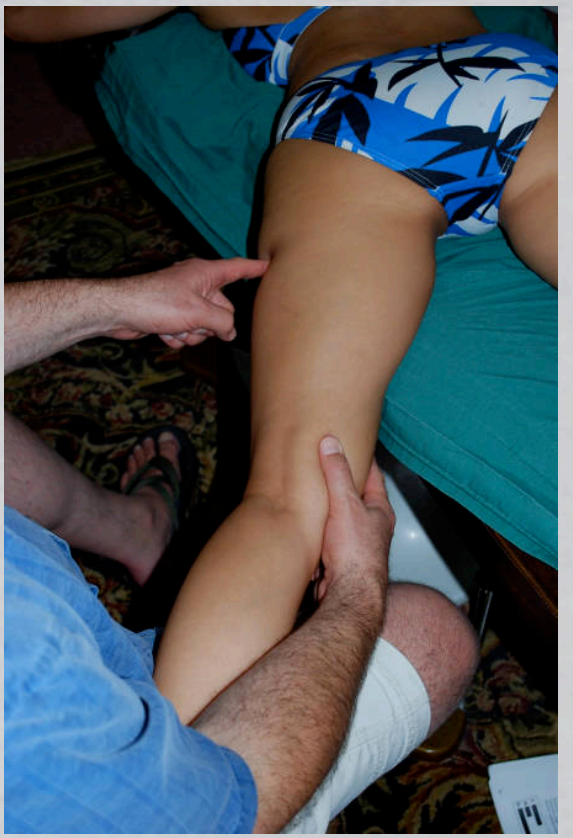
Tender Point:

3-5 mm inferior to the Trochanter between the posterior medial surface of the Femur shaft and the posterior lateral surface of the Ischial Tuberosity.

Tx:

Patient prone. Practitioner grasps Patient's leg standing on the same side as dysfunction placing knee under Patient' s thigh.
Extension - slight
Rotation - moderate externally of thigh
Adduction - usually slight of hip by pulling leg across midline.





Lateral Trochanter (LT)

Tender Point:

On the lateral surface of the Femur, 0-15 cm. distal from the Greater Trochanter along a line in the Iliotibial Band.

Tx:

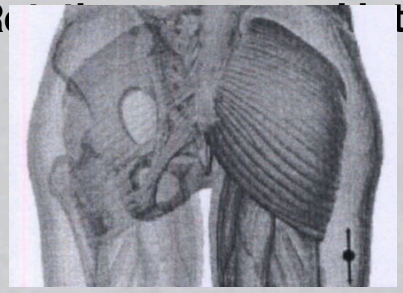
Patient prone

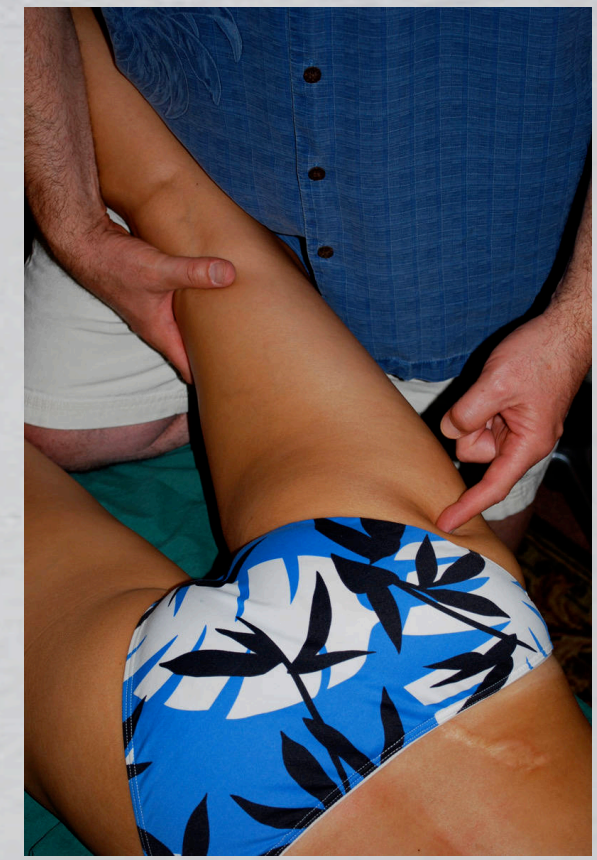
Practitioner seated, supporting Patient's leg on Practitioner's thigh

Flexion - slight of the hip

Abduction - moderate of thigh

R[illegible]ternal rotation





Postero-Lateral Trochanter (PLT)

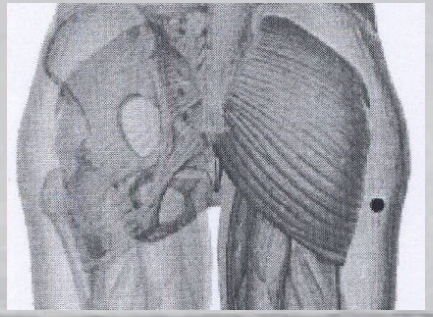
Tender Point:

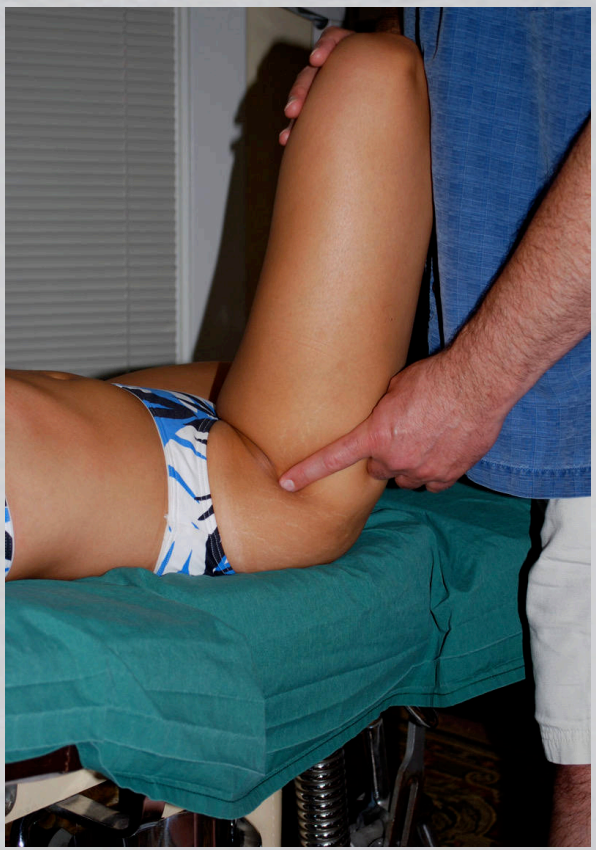
On the superior-lateral aspect of the posterior surface of the Greater Trochanter.

Tx:

Patient prone. Practitioner standing with knee on table under the lateral aspect of Patient's thigh.

Extension - moderate of the hip
Abduction - slight
Rotation - marked externally of thigh





Antero-Lateral Trochanter (ALT)

Tender Point:

5-7 cm. lateral and inferior to the ASIS, anterior and superior to the Greater Trochanter.

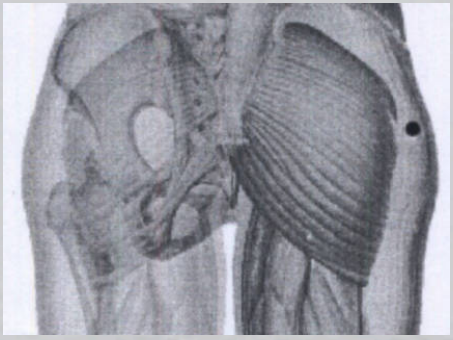
Tx:

Patient supine

Flexion - of the hip 70-90°

Abduction - moderate of the thigh

Rotation - slight externally of thigh



Strain-Counterstrain
&
Myofascial Release

FASCIA

Fascia, n. In anatomy, a thin layer of connective tissue covering, supporting, or connecting the muscle or inner organs of the body.

- Webster New World Dictionary

“I know of no part of the body that equals the fascia as a hunting-ground. I believe that more rich golden thoughts will appear to the mind’s eye as the study of the fascia is pursued, than any other division of the body. Still one part is just as great and useful as any other in its place. No part can be dispensed with.

In every view we take of the fascia a wonder appears. The part fascia takes in life and death gives us one of the greatest problems to solve.

It has a network of nerves, cells and tubes running to and from it; it is crossed and no doubt filled with millions of nerve centers and fibers which carry on the work of secreting and excreting fluids vital and destructive. By its action we live and by its failure we die.“

- Andrew Taylor Still

FASCIA

A Fountain of Supply

"The fascia gives one of, if not the greatest problems to solve as to the part it takes in life and death. It belts each muscle, vein, nerve, and all organs of the body. It is almost a network of nerves, cells and tubes, running to and from it; it is crossed and filled with, no doubt, millions of nerve centers and fibers to carry on the work of secreting and excreting fluids vital and destructive.

By its action we live, and by its failure we shrink, or swell and die. Each muscle plays its part in active life. Each fiber of all muscles owes it pliability to that yielding septum-washer, that gives all muscles help to glide over and around all adjacent muscles and ligaments, without friction or jar.

It not only lubricates the fibers but gives nourishment to all parts of the body. Its nerves are so abundant that no atom of flesh fails to get nerve and fluid supply therefrom."

- Andrew Taylor Still

FASCIA

"If the myofascial system is considered as a functional whole rather than as a merely additive complex of tissue, it becomes apparent that this is the organ of support - a resilient unitary fascial framework, which initiates, transmits and determines movement, as well as ensheathing and supporting all individual parts."

- Ida Rolf

"Emotional response is behavior, is function. All behavior is expressed through the musculoskeletal system, all function is an expression of structure, and form correlates directly with material structure. A man crying the blues is in reality bewailing his structural limitations and failures." **- Ida Rolf**

"Until the physical situation can somehow be changed, the psychotherapist can make very little headway. 'You do not run because you are afraid, you are afraid because you run,' said William James at the turn of this century, and nothing since has changed the validity of this observation. Our angry friend is chronically angry because his body is still fixed in a physical attitude of anger."

- Ida Rolf

The Many Faces of Connective Tissue, the primary organ of structure.

- Supports vessels, nerves, bones, organs - Everything
- Allows for movement of adjacent tissues to one another
- Gives stability and contour to various structures
- Contains lubricating fluid which provides nutrients and allows movement to occur between tissues
- Works with afferent transmission from Pancinian Corpuscles in the superficial fascia, allowing reflex mechanisms to occur
- Is a continuous network which extends into ligament, tendon, muscle and ultimately all body structures
- Is intimately linked to the mechanoreceptors and proprioceptors of the body, thus it helps us deal with gravity and all other movement and posture sense

The Many Faces of Connective Tissue

- Helps prevent the of infection between body compartments, and contains immunologic protective mechanisms
- Is made up of collagen fibers, elastic fibers, cellular elements and ground substance which are linked by hydrogen bonds
- Has elastic and plastic qualities and is subject to hysteresis and creep phenomena
- Has gel-sol properties which are subject to thixotropy (when moved or heated it becomes fluid-like)
- Is is derived from the mesenchyme which produces tendon, ligament, cartilage, bone, marrow, muscle, blood, lymph vessels and the surface lining of the body cavities, the joint capsules, kidneys, ureters, gonads, genital ducts and the adrenal cortex

"A human being is a container invented by water so it could walk around"

What Affects the Myofascial System?

- **Diet and Nutritional State (B12)**
- **Hormones (cortisone, adrenalin, growth hormone)**
- **Diseases (collagen vascular disease especially)**
- **Stress of any source (physical, thermal, emotional, chemical)**
- **Acute Injury - Chronic Injury**
- **Birth**
- **Gravity**
- **Posture**
- **Emotions**
- **Mind**
- **Other**

> ***"The connective tissues not only bond the various parts of the body, but in a broader sense, connect the numerous branches of medicine"***
>
> - George Synder
> Professor of Anatomy
> Kirksville College of
> Osteopathy & Surgery

Causes of Injuries

- Trauma from External Forces
- Trauma from Internal Forces
- Improper Training - Poor Technique, Overuse, Overtraining
- Improper Warm-Up, Warm Down, Stretching
- Imbalance in Aerobic vs. Anaerobic
- Postural Asymmetry - Uneven Development, Short Leg, Foot Pronation

Causes of Injuries

- **Functional Impairment**
  - **Lymphatic Drainage**
  - **Circulation**
  - **Meridian Flow**
  - **Cerebral Spinal Flow**
  - **Neurological**
- **Nutritional Deficiencies**
- **Emotional Stress**
- **Endocrine: e.g. Adrenal Exhaustion**
- **Visceral Problems**
- **Adaptive Patterns from Previous Injuries**

Fascial Modalities

1. Deep fascial release (e.g. Rolfing, Postural Integration, Soma, Hellerwork)
2. Direct Fascial traction and twist
3. Myofascial Unwinding
4. Spray and Stretch (ice edge in emergency)
5. Position Release
6. Stretch-Contract-Stretch
7. Exercise: Yoga et el
8. Applied Kinesiology- Diagnosis - Treatment Utilizing Neurolymphatic and Neurovascular Reflexes

Monitoring Motions

- Flexion - Extension
- Sidebending
- Rotation
- Anterior - Posterior Translation
- Lateral - Translation
- Cephalad - Caudad Translation
  (Distraction - Compaction)
- Inhalation - Exhalation

Myofascial Release

Major Techniques:

Direct

1) Ward/Chila - Long Axis Traction & Twist
2) Direct Deep Tissue Release of Fascial Tension with Fingers, Thumbs, Elbow, Fist

Indirect

1) Unwinding
2) Positional Release

Myofascial Release

Direct Method

- Motion test to determine barriers
- Apply traction and twist with constant load into the barriers until the myofascial complex releases.

Myofascial Release

Indirect Method

- Motion Tests:
    - Compress vs Traction
    - Rotation Left vs Rotation Right
- Flex vs Extend
- Abduct vs Adduct
- Anterior vs Posterior

Diaphragm Release

Apply Cream to Reduce Friction



Diaphragm Release

Thumb Under Costal Margin



Diaphragm Release

Curl Fingers Under Costal Edge



Diaphragm Release

<u>VERY</u> Slow Movement From Medial to Lateral



Diaphragm Release

Thumb Under Costal Cage



Diaphragm Release

Fingers in midline between xiphoid and umbilicus,

NOT ON AORTA!

focus into the point of greatest tension on each exhalation.



Locating Psoas:

Fingers deep at lateral border of Psoas.

Patient pushes knee toward their nose against resistance.

Feel deep for “tight cylinder”.



Treating tight Lateral Psoas:

Fingers on Psoas fascia.

Patient *slowly* stretches Femur away from hip, towards foot on same side.



Locating Psoas Medial Border (L4-L5 issues):

Fingers feel deep for Psoas as Patient flexes hip with pelvic tuck.



Treating Tight Medial Psoas Fibers:

Fingers palpating Psoas tension as Patient lifts feet off table with subtle hip flexion



Preparation for Releasing and Stretching Psoas:

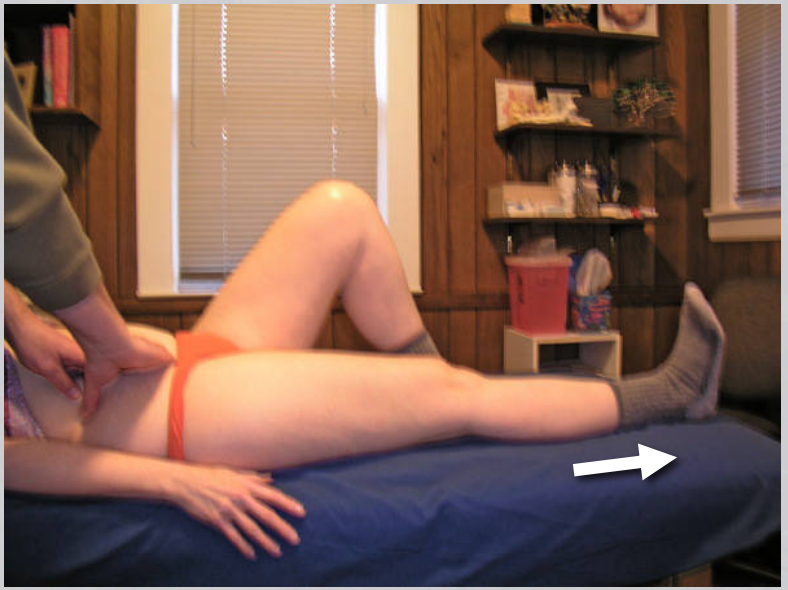
Contact Psoas along its length.



Psoas Stretch/Release:

Maintain fingers on points of tension along the Psoas.

Patient slides foot to extend knee and stretch through heel.



Myofascial Release of Sacrum-Pelvis

Follow the release indirectly.

Move both hands to find compliance directions.



Myofascial Release

Connecting Sternum with Sacrum



Myofascial Release

Direct or Indirect Pelvic Release



Myofascial Release

Diagnosis and Treatment using long axis leg traction from foot up into hip, pelvis, trunk.



Myofascial Release

Direct or Indirect Approach To Thoraco-Lumbar Area (Back of Diaphragm)



Myofascial Release

Direct or Indirect Release of Lumbar Fascia



Myofascial Release

Releasing Lumbo-Sacral Fascia



Myofascial Release

Indirect Release of Lumbo-Sacral Region



Myofascial Release

Long Axis Traction of Pelvis and Lumbar



Myofascial Release

Pelvic Release Using Direct or Indirect Technique



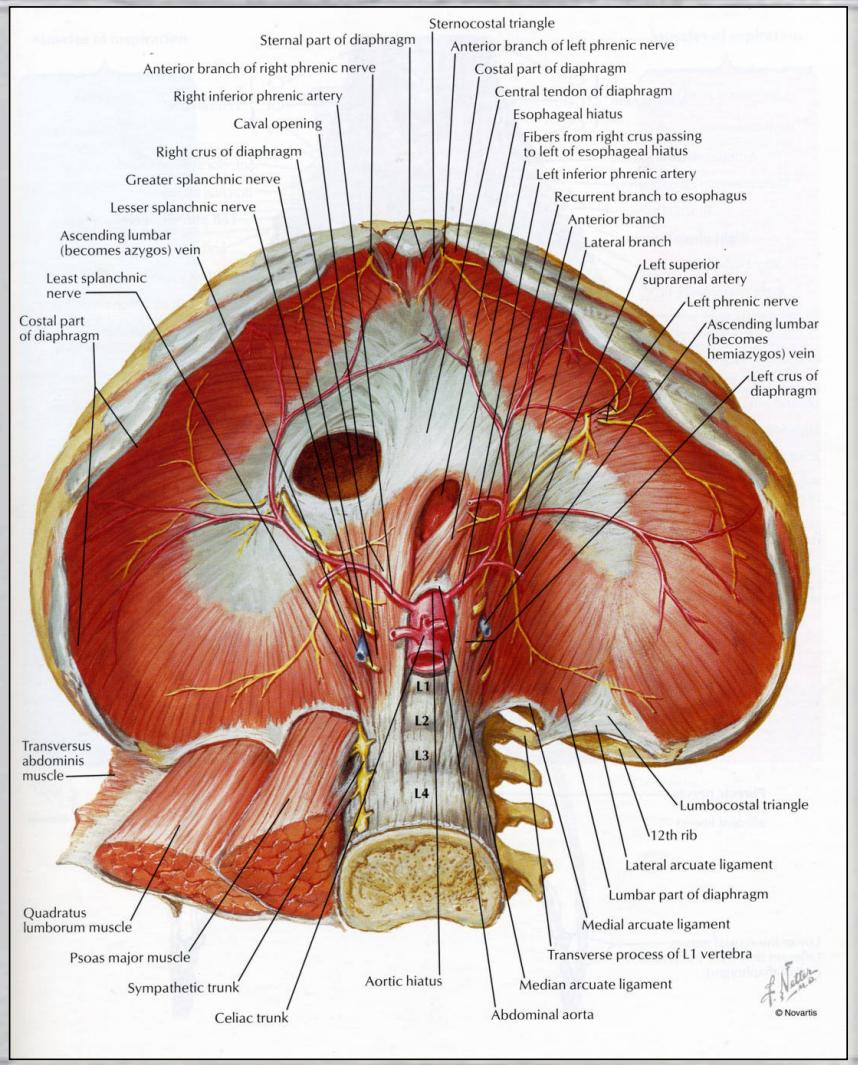
Myofascial Release

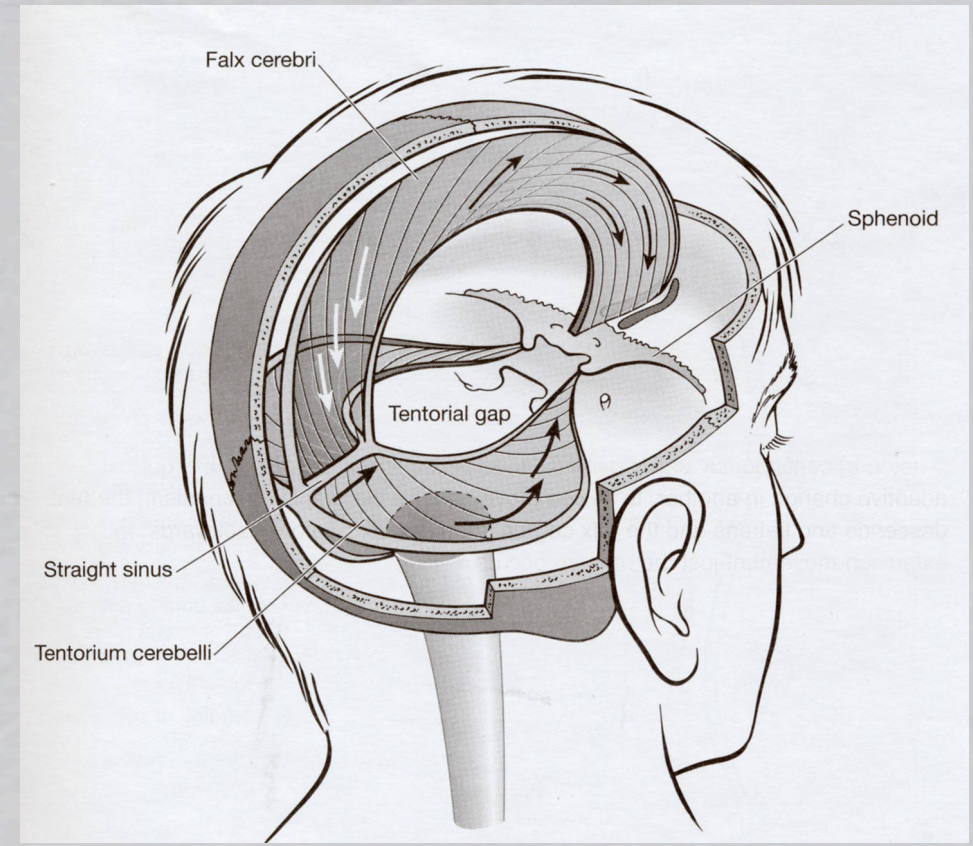
Indirect Release of Sacrum and Pelvis

Thumbs on ILAS, index fingers on Sacral Sulci, palm and remaining fingers on Ilia



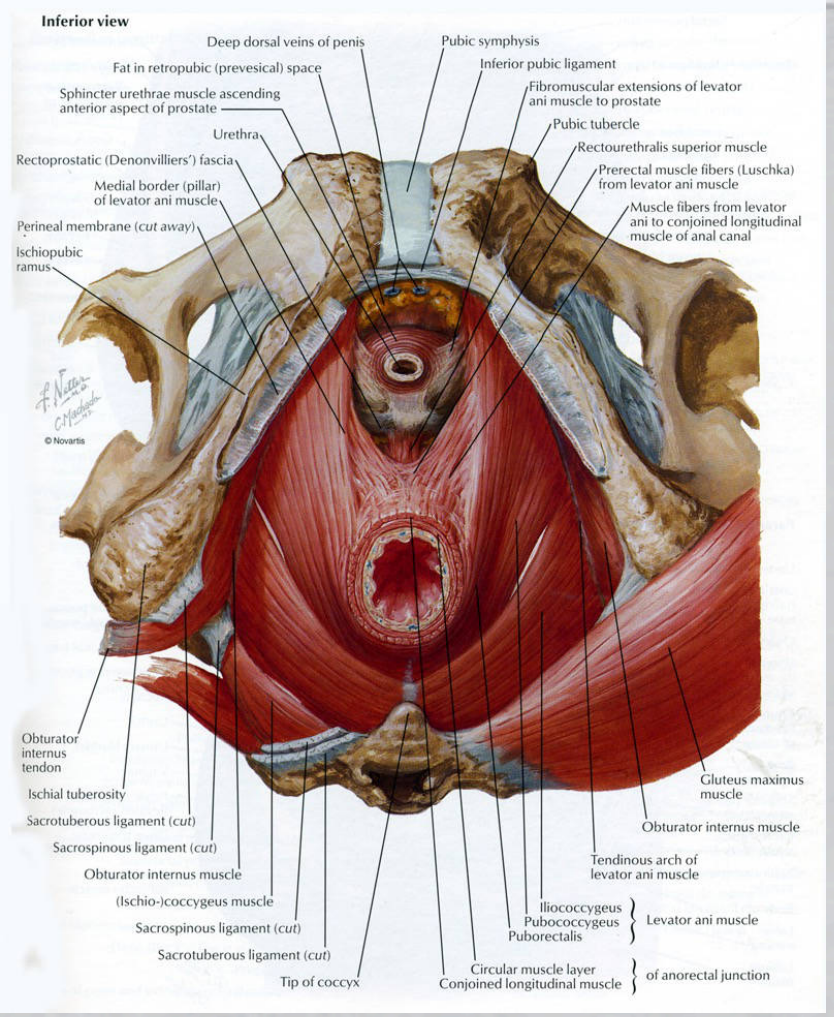
Thoracic Diaphragm

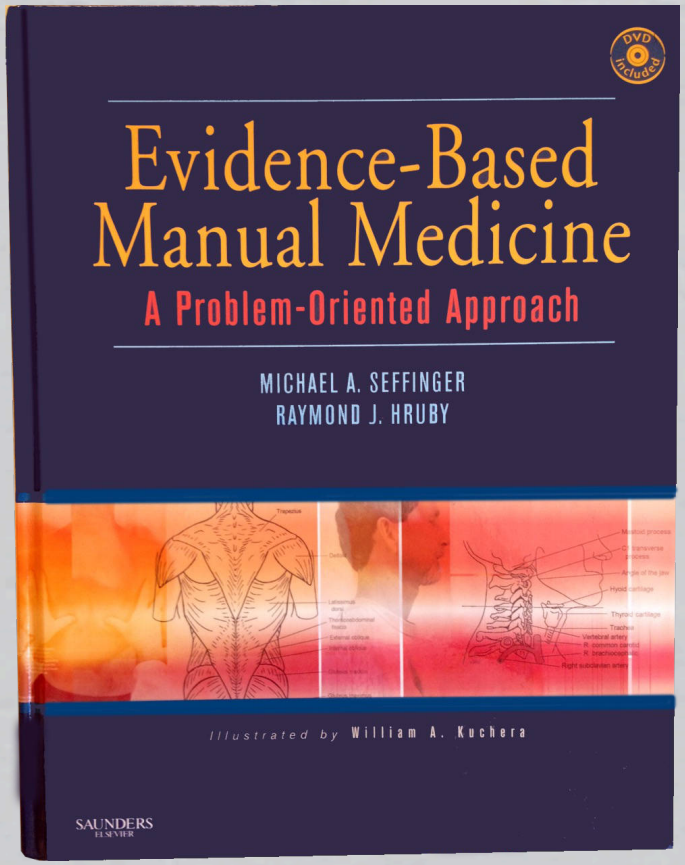




Cranial Diaphragm

Pelvic Diaphragm




DVD included
Evidence-Based Manual Medicine
A Problem-Oriented Approach
MICHAEL A. SEFFINGER
RAYMOND J. HRUBY
Illustrated by William A. Kuchera
SAUNDERS
ELSEVIER

TRAUMA

AN OSTEOPATHIC APPROACH

Jean-Pierre Barral & Alain Croibier



Illustrated by Jacques Roth

Lab and Hands-On Practice Of Muscle Energy Techniques

Rational Sequence for Pelvis Examination and Treatment

1. Clear lumbo-thoracic spine of non-neutral segmental dysfunction
2. Reduce any pelvic dislocations
3. Diagnose and clear any sacroiliac dysfunctions
4. Mobilize any ilio-sacral dysfunctions
5. Check and treat the O-A

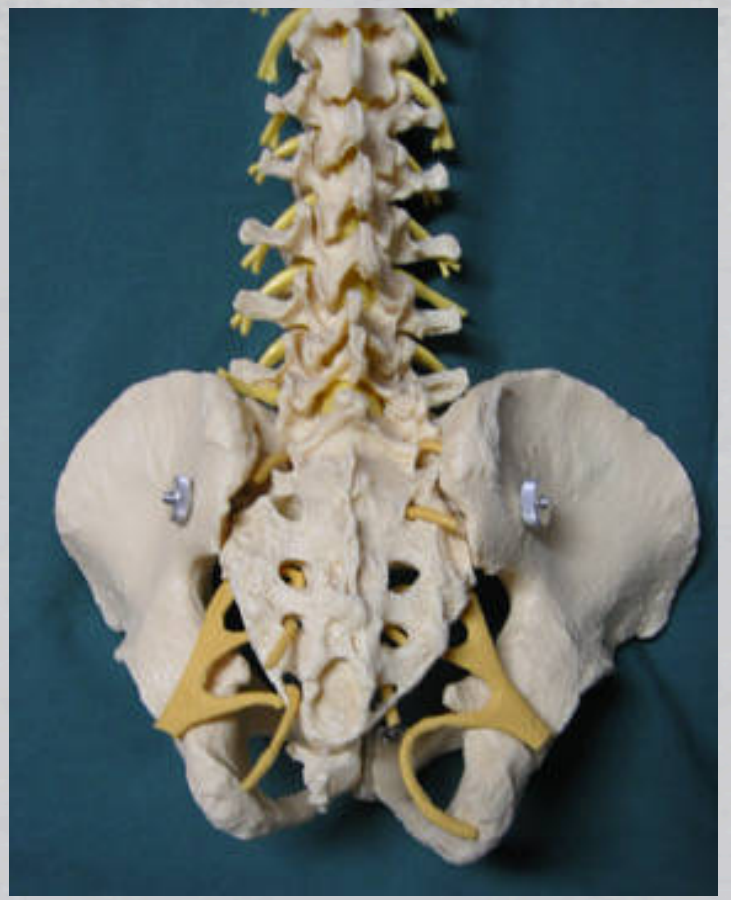
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Posterior View of Lumbar, Sacrum, Pelvis



Muscle Energy

Standing Iliac Crest Positions



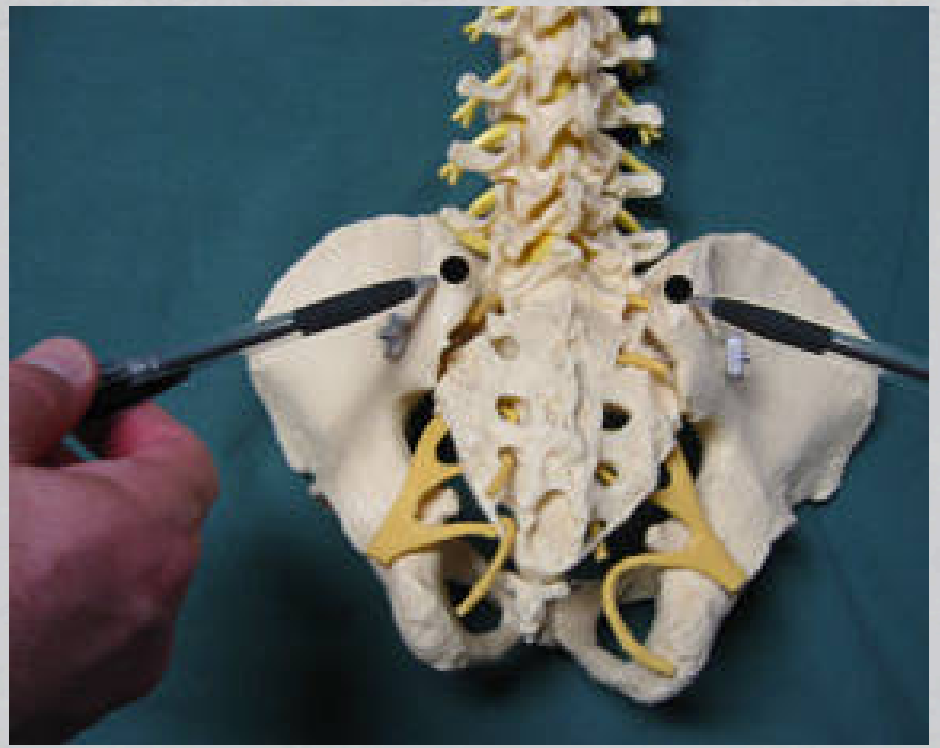
Muscle Energy

Standing Trochanter Positions



Location Of PSIS (PIP)

Used for monitoring motion in standing and seated flexion tests.



Muscle Energy

Standing Flexion Test:

Observe motion on the way up.

The Positive side is the PSIS that moves first.



Muscle Energy

Stork Test:
For Mobility
Of Left SI

PSIS should move *inferior* on side of raised leg.



Muscle Energy

Place thumbs on Medial Inferior Surface of PIP before Seated Flexion Test.



Muscle Energy

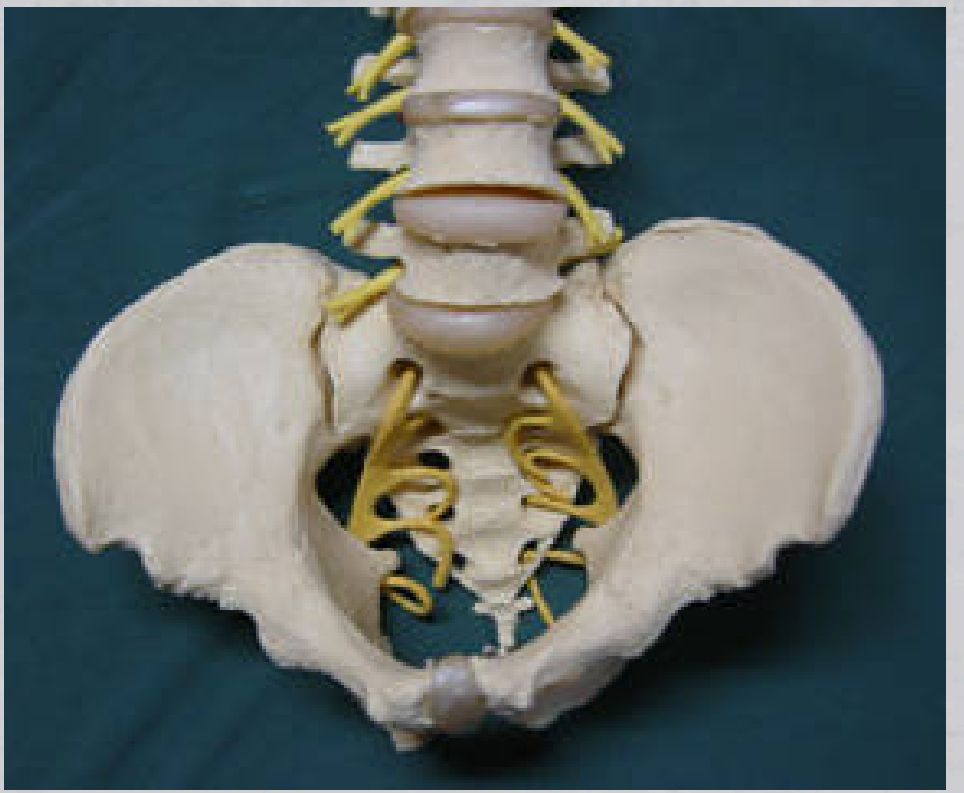
Seated Flexion Test:

Observe the PSIS on the way back up to sitting.

The *Positive PSIS* is the first to move on the way up.



Anterior View of Lumbar, Sacrum, Pelvis



Muscle Energy

Procedure For Standard Alignment of Patient in Supine Position



Muscle Energy

1. Ask patient to bend knees, with feet flat on table.

2. Then ask patient to lift hips off table.



Muscle Energy

3. Patient lifts hips off table, with feet stabilized.



Muscle Energy

4. Pull legs straight after patient re-settles hips on table.



Muscle Energy

5. Now observe leg lengths with thumbs at medial malleoli.



Locating ASIS "Birds-Eye View"

Assists in determining relative superior-inferior positions (Anterior vs. Posterior rotations)



Muscle Energy

Observing ASIS Positions, Superior vs. Inferior

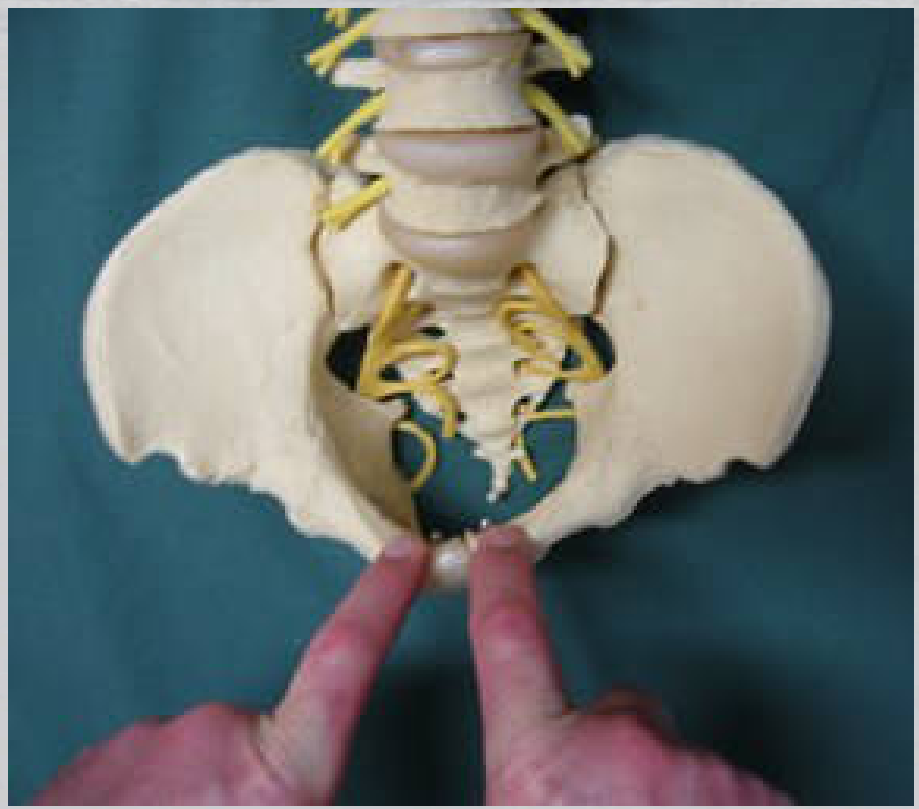


Muscle Energy

Checking ASIS For Internally And Externally Rotated Ilia



Locating Position For Assessing Pubic Bone Diagnosis



Muscle Energy

Locating Pubic Bone with Palm

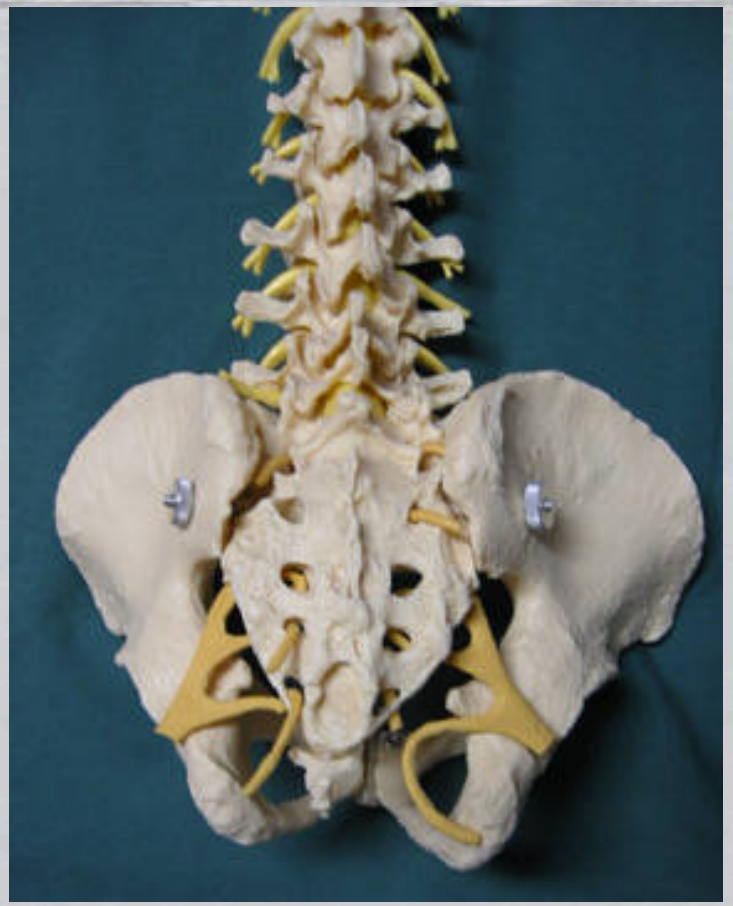


Muscle Energy

Observing
Pubic
Bone
Position

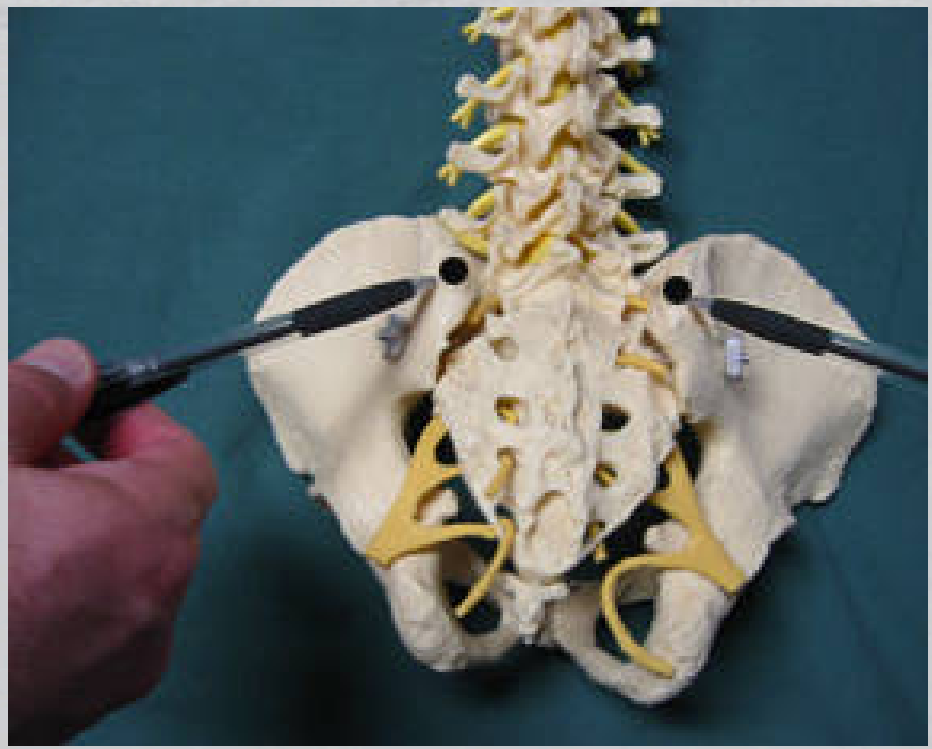


Posterior View of Lumbar, Sacrum, Pelvis



Location Of PSIS (PIP)

Used for monitoring motion in standing and seated flexion tests.



Location For Palpating Ischial Tuberosities.

Use “Bird’s Eye” View to find upslipped pelvis.



Muscle Energy

Observing Tuberosities



Muscle Energy

Checking Sacro-Tuberous Ligament Laxity

Will be loose on the side of an upslipped pelvis.



Muscle Energy

Prone
Hip Crests



Muscle Energy

Observing Trochanters



Muscle Energy

Observing Leg Lengths, Prone



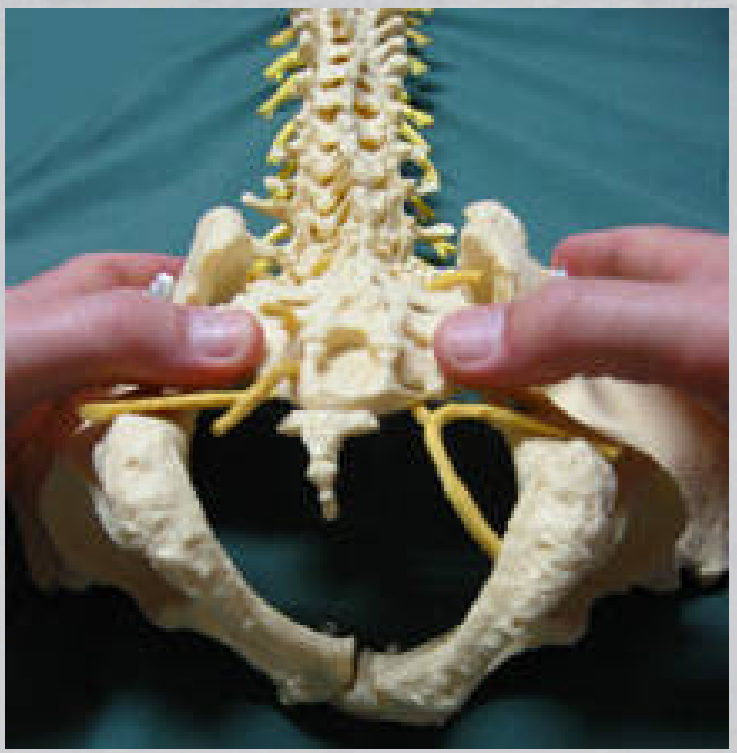
Location For Assessment Of Inferior Lateral Angles (ILA) Of The Sacrum

Helps in sacral diagnosis to have thumbs on inferior surface of ILA
"Bird's-eye" view to see superior-inferior status.



Location For Assessment Of Sacral Rotations (Left or Right)

**Thumbs on posterior surface of ILA,
looking along the horizontal plane for posteriority.**



Muscle Energy

Finding The Inferior Lateral Angles Of The Sacrum

Feel sacrum in your palm, and sense the ILA's in the Thenar-Hypothenar



Muscle Energy

Palpating ILAs



Muscle Energy

Observing ILA Position For Inferiority



Muscle Energy

Observing ILA Position For Inferiority



Muscle Energy

Observing ILA Position For Posteriority



Assessment of Lumbar Transverse Processes In Prone Extended Position

If one TP is *posterior*, the facet is stuck on *the opposite side* (for finding FRS restrictions).



Muscle Energy

Screening For Rotation Of Lumbars In Neutral Prone Position



Muscle Energy

Screening Lumbars For An ERS Dysfunction

What sticks out in flexion?



Muscle Energy

Checking Hamstring Tension

May also check with hip in flexed position.



Muscle Energy

Checking External Rotation Of Hips



Muscle Energy

Treatment of Superior Pube, Left Side

Patient lifts knee against Practitioner's hand.



Muscle Energy

Treatment Of An Inferiorly Displaced Pubic Bone, Right Side

Patient pushes knee into shoulder of Practitioner.



Muscle Energy

Pre-Treatment For “Shot-Gun” Pubes Technique

Patient attempts abduction.



Muscle Energy

“Shot-Gun” Pubic Bone Correction

Patient tries to “crush” Practitioner’s arm with strong adduction.



Muscle Energy

Treatment Of Internally Rotated Ilium

Patient pushes knee up against Practitioner's hand.



Muscle Energy

Treatment Of Externally Rotated Ilium

Patient attempts to abduct right knee.



Muscle Energy

Treatment of Right Upslipped Pelvis

Pull slowly several times on exhalation.

Then a short, quick pull during patient cough.



Muscle Energy

Finding An ERS Lumbar By Having Patient Slump Into Flexion

The posterior lumbar TP is the facet side that will not open.



Muscle Energy

Setting Up Treatment For Correction Of An ERSR Lumbar Restriction

Stand on same side of stuck facet.



Muscle Energy

Setting Up Treatment Of An L_2-ERSR

Patient's right hand on their left shoulder, Practitioner's right arm under patient's arm.



CERVICAL REGION PEARLS

- **PROBLEMS** OF THE CERVICAL SPINE REGION CAN **COME FROM ANYWHERE!**

- **COMMON NEUROMUSCULOSKELETAL CAUSES** OF THESE PROBLEMS INCLUDE:
- **CRANIAL FIELD SOMATIC DYSFUNCTIONS** (JUGULAR FORAMEN: CN9,10,11)
- **VISUAL DISORDERS**
- (OFTEN UNDIAGNOSED VERTICAL HETEROPHIA OR OTHER VISUAL PERCEPTUAL DEFECTS), **TMJ AND HYOID BONE** DYSFUNCTIONS.
- THESE MUST BE IDENTIFIED AND TREATED TO ACHIEVE LASTING CORRECTIONS
- **LOVETT BROTHER REACTIVITY**:
  SACRUM=OCCIPUT, L5=C1, L4=-C2, L3=-C3, L2=C5, L1=-C6

CERVICAL REGION PEARLS

- **SACROILIAC FIXATIONS** = INHIBIT POSTERIOR CERVICAL EXTENSOR MUSCLES
- **UPPER THORACIC VERTEBRA, RIBS, AND UPPER EXTREMITIES** GREATLY INFLUENCE CERVICALS
- **VISCERAL PTOSIS** (USUALLY KIDNEY OR LIVER) OR **VISCERAL RESTRICTIONS** FROM THE THORAX(PLEURA/LUNG) CAN CREATE OR PERPETUATE CERVICAL SYNDROMES
- **AFTER WHIPLASH INJURY** NEED TO TREAT DIAPHRAGM, DURAL STRAINS, CRANIAL DYSFUNCTION (OFTEN PETROJUGULAR DISLOCATION), LOCAL SOFT TISSUES: MUSCLE SPINDLE CELLS, FASCIA, MUSCLES, GOLGI TENDONS

CERVICAL REGION PEARLS

- **POSTURAL ERGONOMICS:**
- *"THE HEAD IS A HEAVY BOWLING BALL"*
  ALEXANDER TECHNIQUE, WORKSITE EVALUATION, POSTURAL TRAINING MAY ALL BE NECESSARY

- **GAIT AND LOWER EXTREMITY INVOLVEMENTS:** SHORT LEG, FOOT PRONATION, TIGHT TALOCRURAL MOTION, ASYMMETRICAL GAIT SWING, "WALKING GAIT" DISORDERS CAN ALL CAUSE OR PERPETUATE CERVICAL PROBLEMS

CERVICAL REGION PEARLS

OTHER IDEAS TO CONSIDER:

- ALL **ACUPUNCTURE CHANNELS AND POINTS** IN THE HEAD AND NECK REGION ARE **YANG** EXCEPT FOR THE CONCEPTION VESSEL IN THE VENTRAL MIDLINE
- **4** OF THESE **YANG** CHANNELS ARE CONNECTED TO THE **EYES** (BL, ST, TH AND GB)
- **4** OF THESE YANG CHANNELS ARE CONNECTED TO THE TMJ REGION (SI,ST,TH, AND GB)

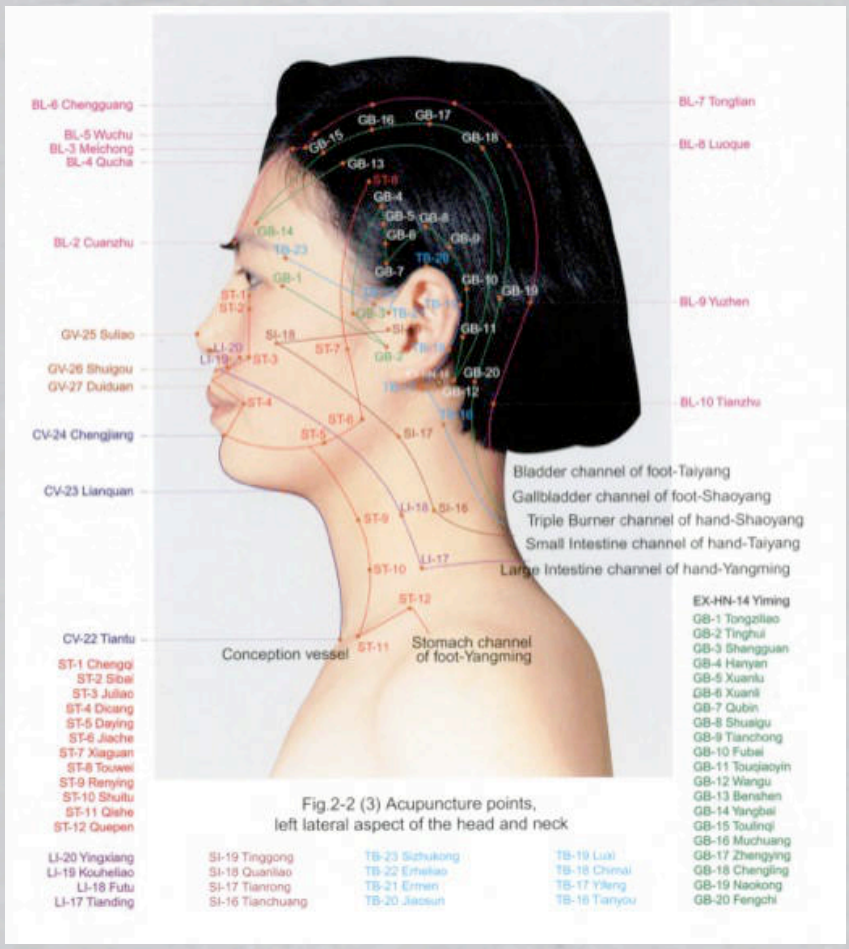


Fig.2-2 (3) Acupuncture points, left lateral aspect of the head and neck

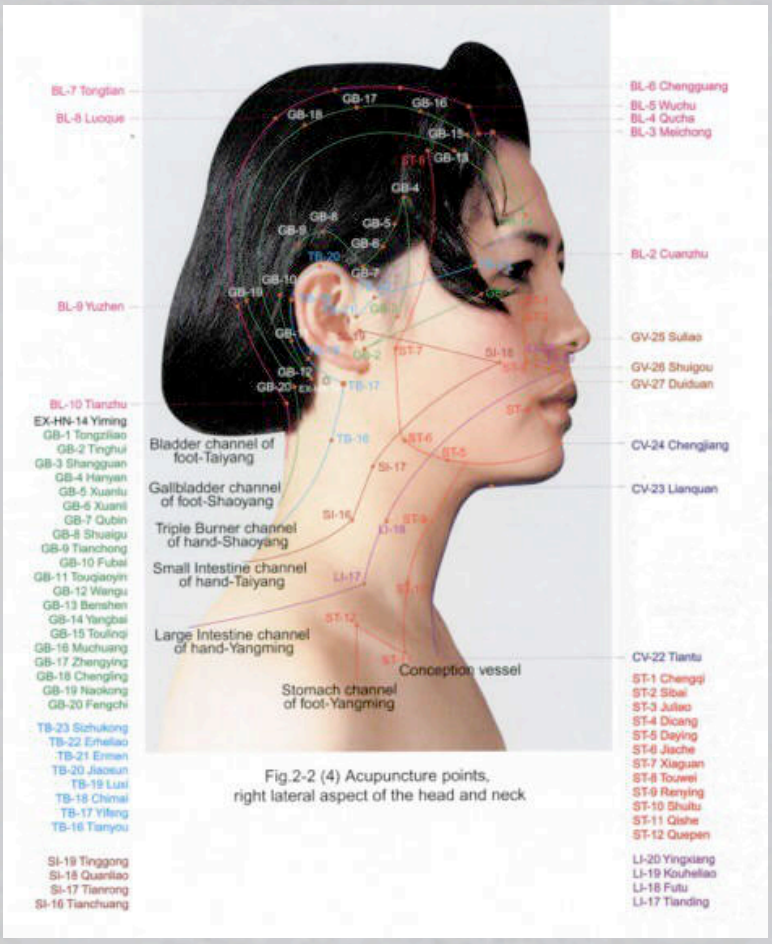


Fig.2-2 (4) Acupuncture points, right lateral aspect of the head and neck

CERVICAL REGION PEARLS

OTHER IDEAS TO CONSIDER:

- DISTURBANCES IN ANY OF THESE CHANNELS CAN BE A CAUSE OF CHRONIC CERVICAL COMPLAINTS. DISTURBANCES CAN INVOLVE ORGANS AND GLANDS ASSOCIATED WITH THOSE CHANNELS. (EXAMPLE: **GERD** MAY BE CAUSED BY**"REBELLIOUS STOMACH QI".** GERD MAY CAUSE SORE THROAT OR OTHER SYMPTOMS IN THE CERVICAL/TMJ AREA WHICH FOLLOW THE TRAJECTORY OF THE UPPER STOMACH MERIDIAN.) THIS IS ANOTHER WAY OF UNDERSTANDING VISCERO-SOMATIC PAIN PATTERNS. **GALL BLADDER MERIDIAN PROBLEMS** MAY PRESENT AS NECK OR SHOULDER PAIN

- **THE NECK IS A VULNERABLE, SENSITIVE AREA:** CAROTID ARTERIES, THYROID, PARATHYROIDS, TRACHEA, SPINAL CORD VAGUS AND PHRENIC NERVES

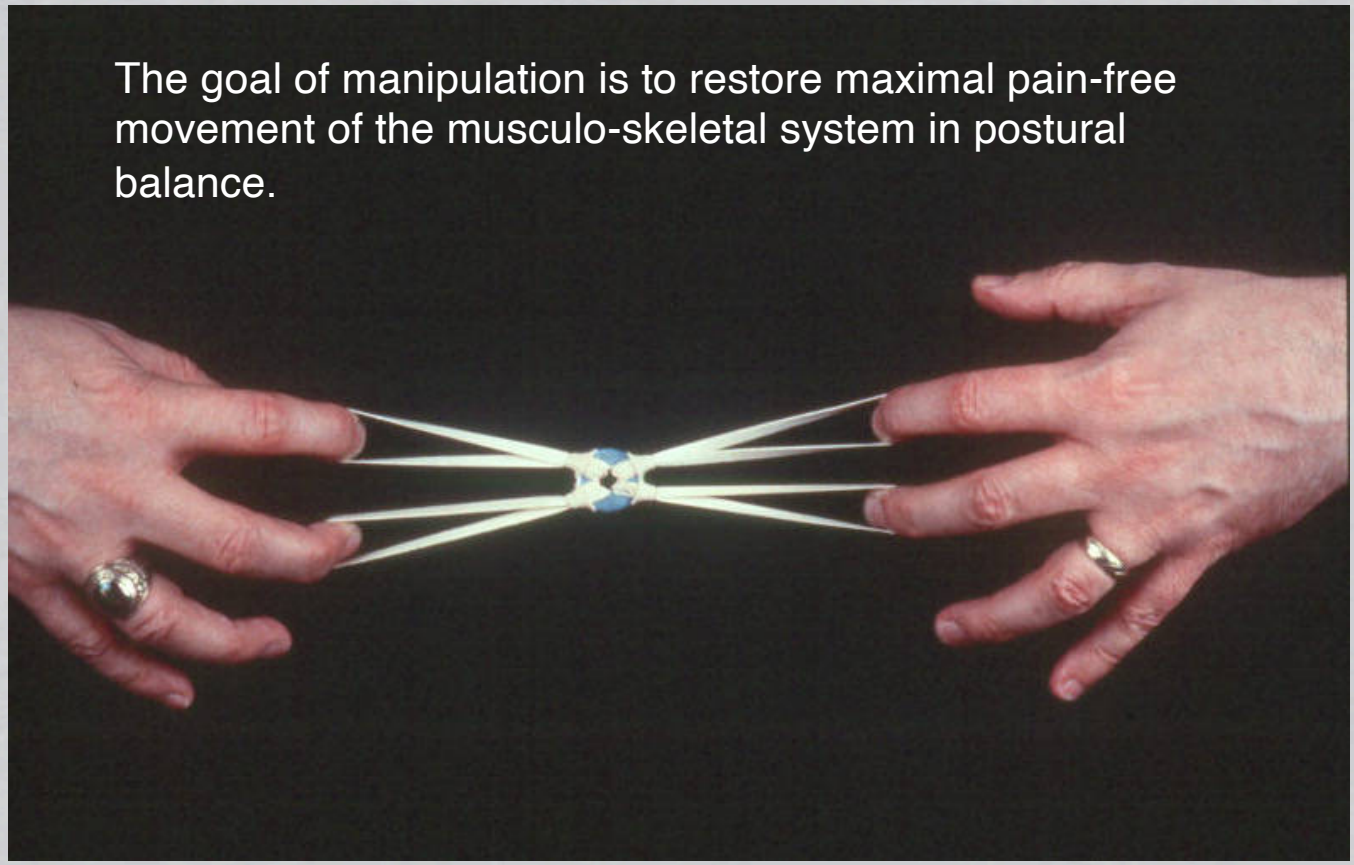
CERVICAL REGION PEARLS

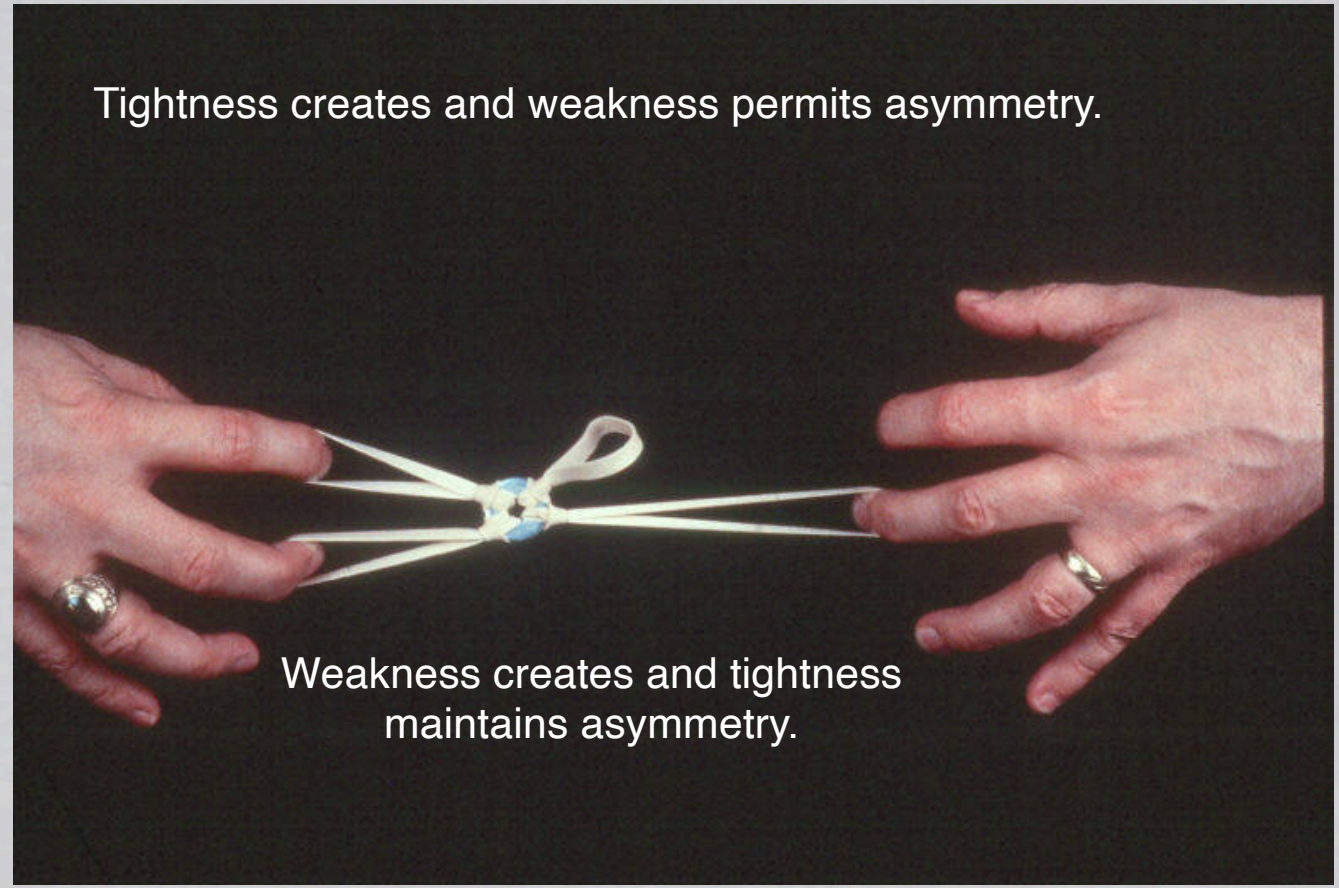
OTHER IDEAS TO CONSIDER:

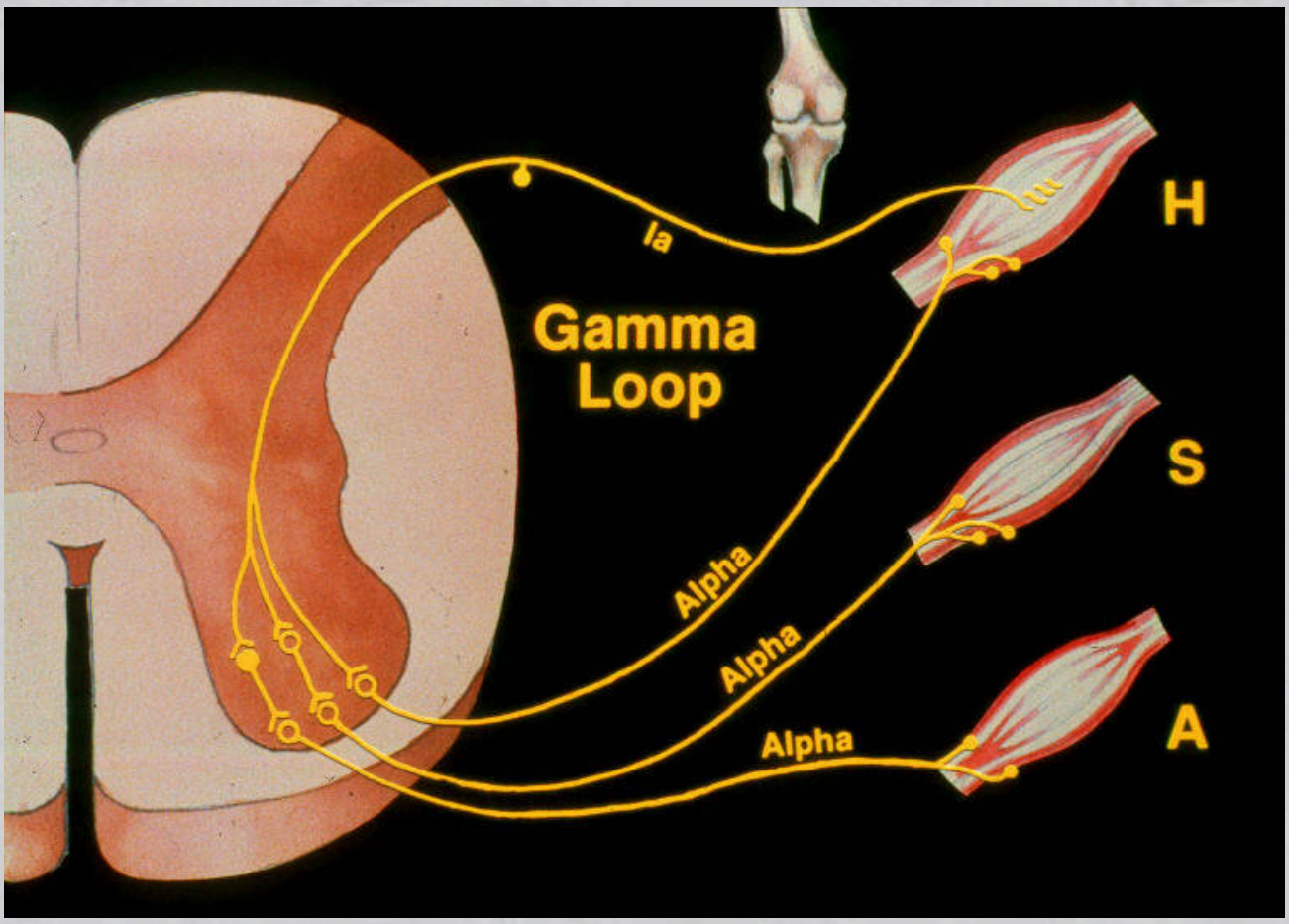
- **"BOTTLE NECK":** CONNECTOR BETWEEN THE HEAD (MIND) AND BODY (HEART) BECOMES SYMPTOMATIC WHEN THERE IS CONFLICT BETWEEN MIND AND EMOTION

- **SADNESS AND GRIEF** STORED THERE

- REPRESENTS THE **INHERENT FLEXIBILITY** TO SEE BOTH SIDES OF AN ISSUE

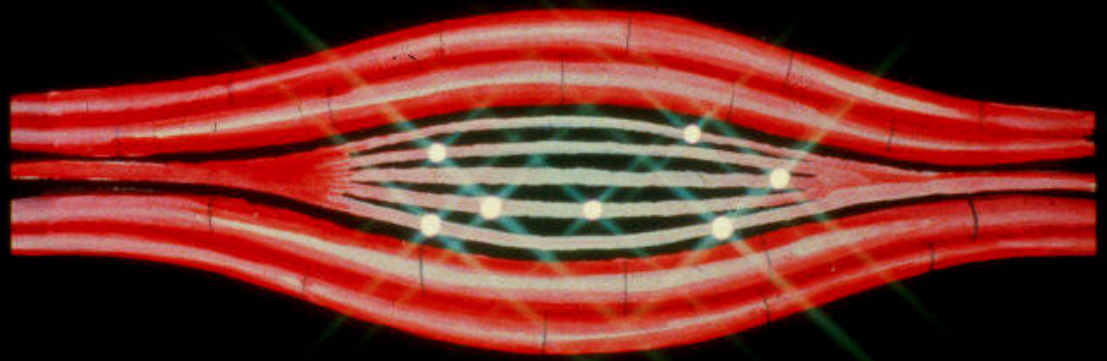

The goal of manipulation is to restore maximal pain-free movement of the musculo-skeletal system in postural balance.


Tightness creates and weakness permits asymmetry.
Weakness creates and tightness
maintains asymmetry.


Ia
Gamma
Loop
H
S
A
Alpha
Alpha
Alpha



Possible Dysfunction



Injury To Intrafusal Fibers

FUNCTIONAL RELEASE EXERCISE

STAND BEHIND YOUR STANDING PATIENT LIGHTLY HOLDING THEIR FOREHEAD

WITH YOUR OTHER HAND MAKE SOFT REPEATED POSTERIOR TO ANTERIOR (P-A) GLIDES WITH YOUR THUMB AND FINGERS TOUCHING THE POSTERIOR FACET PLANES OF THE CERVICAL SPINE REGION

BEGIN BY SHEARING P-A AT THE OCCIPUT LEVEL AND THEN PROCEED ONE VERTEBRAL LEVEL AT A TIME UNTIL YOU HAVE INDIVIDUALLY APPRECIATED A P-A GLIDE AT EACH LEVEL C-0 THROUGH C-7

YOU MAY NOTE THAT ONE OR MORE LEVELS SEEM TO PRODUCE MORE RESISTANCE TO THE P-A GLIDE THAN THE LEVEL ABOVE AND BELOW THAT LEVEL

YOU MAY ALSO DO THIS PROCEDURE WITH YOUR PATIENT SEATED

ONCE YOU HAVE IDENTIFIED A PARTICULAR CERVICAL SPINE LEVEL THAT EXHIBITS MORE RESISTANCE TO P-A GLIDE THAN THE LEVELS ABOVE AND BELOW, YOU WILL FOCUS YOUR PALPATORY SKILLS AND ATTENTION TO COMPARE THE RELATIVE COMPLIANCE VS. RESISTANCE OF THOSE PARTICULAR TISSUES AS THEY RESPOND TO THE MOTIONS YOU WILL INDUCE PASSIVELY. YOU MUST ALSO NOTE HOW THE PATIENT’S TISSUES RESPOND TO INHALATION AND EXHALATION.

FUNCTIONAL RELEASE EXERCISE

A KEY LESION IS CONSIDERED TO BE THAT MOBILE SEGMENT IN THE MIDDLE OF A 3 SEGMENT STACK OF VERTEBRAE THAT BEHAVES EXACTLY THE OPPOSITE OF THE SEGMENTS ABOVE AND BELOW IT.
CAREFUL PALPATION WILL REVEAL THAT THE MOTIONS THAT INCREASE TENSION IN THE TISSUES SURROUNDING SEGMENTS ABOVE AND BELOW THE KEY LESION, WILL ACTUALLY DECREASE TENSION IN THE TISSUES ADJACENT TO THE KEY LESION. THIS WILL ALSO BE TRUE OF THE TISSUE RESPONSES TO INHALATION AND EXHALATION.

TREATMENT IS GENERALLY PERFORMED WITH THE PATIENT SUPINE.
THE LEVEL OF THE KEY LESION IS TOUCHED BILATERALLY BY THE PRACTITIONER'S RELAXED FINGERTIPS AND THE ELBOWS ARE SUPPORTED IN SUCH A WAY AS TO SUPPORT THE PATIENT'S HEAD.

THE TREATING HEALTH PROFESSIONAL WILL PASSIVELY INDUCE THE 6 MONITORING MOTIONS WHILE NOTING WHICH DIRECTIONS PRODUCE GREATER OR LESSER TENSIONS IN THE PALPATED TISSUES. THE PATIENT IS ASKED TO INHALE AND EXHALE AS WELL.
AGAIN NOTING WHICH PHASE OF RESPIRATION PRODUCES THE GREATEST SOFTENING OF THE TISSUES.

ONCE ALL MOTIONS HAVE BEEN EVALUATED AND APPRECIATED FOR THOSE THAT PRODUCE THE GREATEST COMPLIANCE VS. RESISTANCE,
THE TREATMENT IS PERFORMED BY "STACKING" ALL THE MOVEMENTS THAT INCREASE COMPLIANCE (EASE) IN THE TISSUES WITH THE PHASE OF RESPIRATION THAT INCREASES COMPLIANCE (EASE)

FUNCTIONAL RELEASE EXERCISE

THESE MOTIONS INCLUDE:

FLEXION/EXTENSION

SIDEBENDING

ROTATION

ANTERIOR/POSTERIOR GLIDE

LATERAL GLIDE

TRACTION/COMPRESSION

INHALE/EXHALE

A SENSE OF RELEASE AND SOFTENING OF THE PALPATED KEY LESION TISSUES WILL BE FELT UPON SUCCESSFUL PERFORMANCE OF THIS PROCEDURE.

RE-EXAMINATION OF THE PREVIOUS ASYMMETRICAL FINDINGS AND PATTERNS SHOULD DEMONSTRATE MARKED IMPROVEMENT THAT NO LONGER PRODUCES PARADOXICAL FINDINGS BETWEEN THE KEY LESION AND THE VERTEBRAL
LEVELS THAT ARE ABOVE AND BELOW THAT SEGMENT.

Somatic Dysfunction Inhibition

Weakness predicts location of the dysfunction
Location of the dysfunction predicts weakness

C1-4

- Neck flexors

C5

- Shoulder flexion
- Shoulder extension
- Shoulder external rotation
- Shoulder adduction & internal rotation
- Elbow flexion

C6

- Shoulder: Abduction
- Shoulder: Jobe position (empty can)
- Elbow : Supination
- Wrist : Radial extension

C7

- Shoulder: Adduction
- Elbow : Pronation
- Elbow : Extension
- Wrist : Radial flexion

C8/Rib1

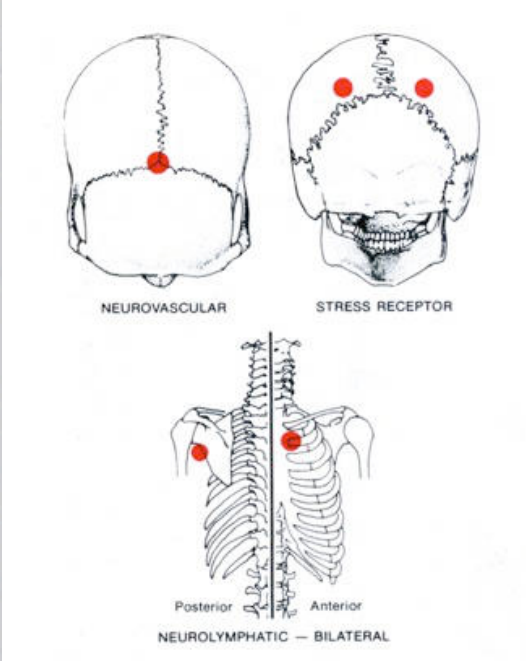
- Wrist : ulnar flexion
- Wrist : ulnar extension
- Thumb: opposition
- Thumb: abduction
- Thumb: extension
- Thumb: interphalangeal flexion

C8/Rib 1

- Fingers
- Index : abduction
- All : distal interphalangeal joint flexion
- Small : opposition
- Small : abduction

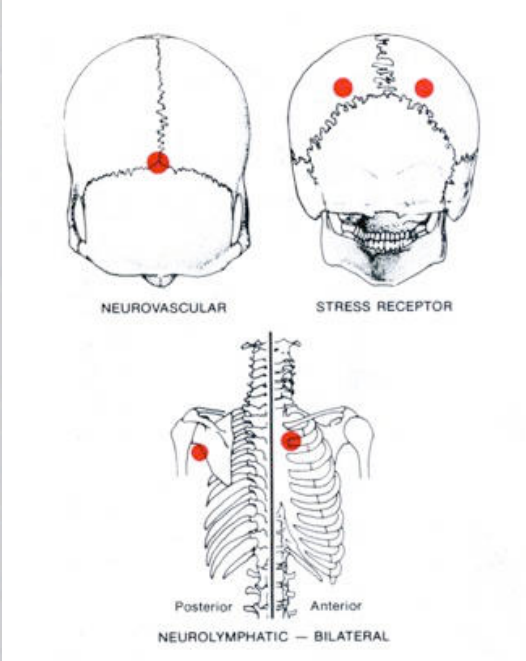
Levator Scapula

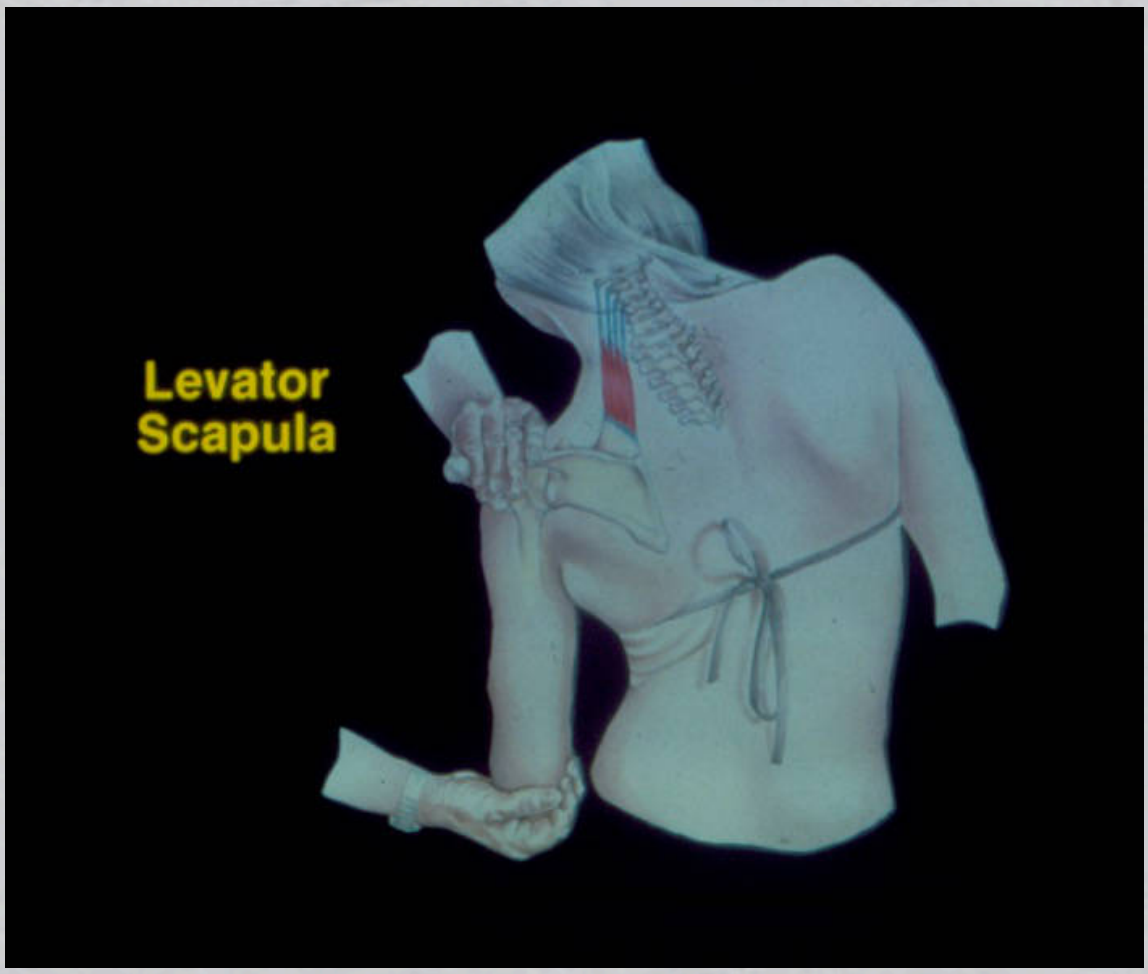




Levator Scapula






Levator
Scapula

Levator Scapula



Nerve Supply:
Dorsal Scapula,
C3, C4, C5

Common Subluxations:

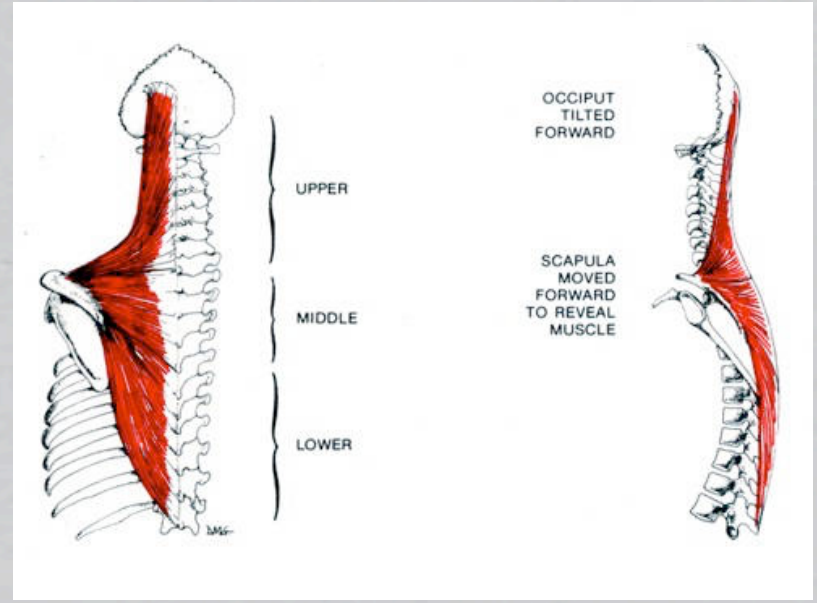
Assoc. Pt. T3, 4

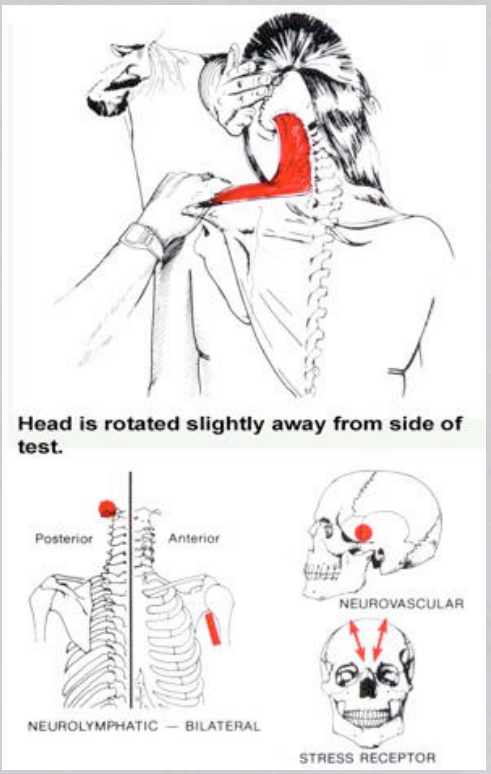
Nutrition:
Parathyroid
Substance

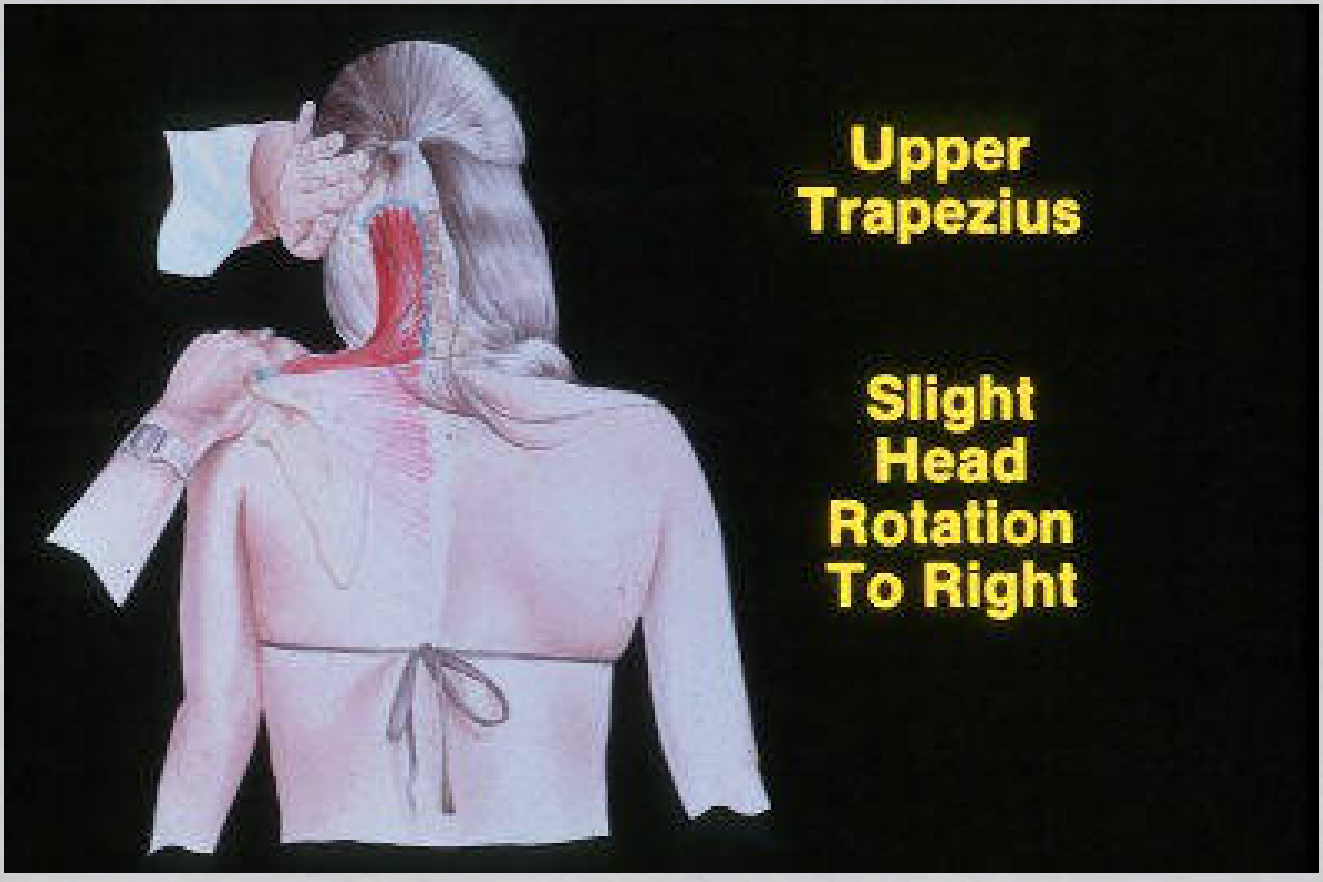
Parathyroid Glands

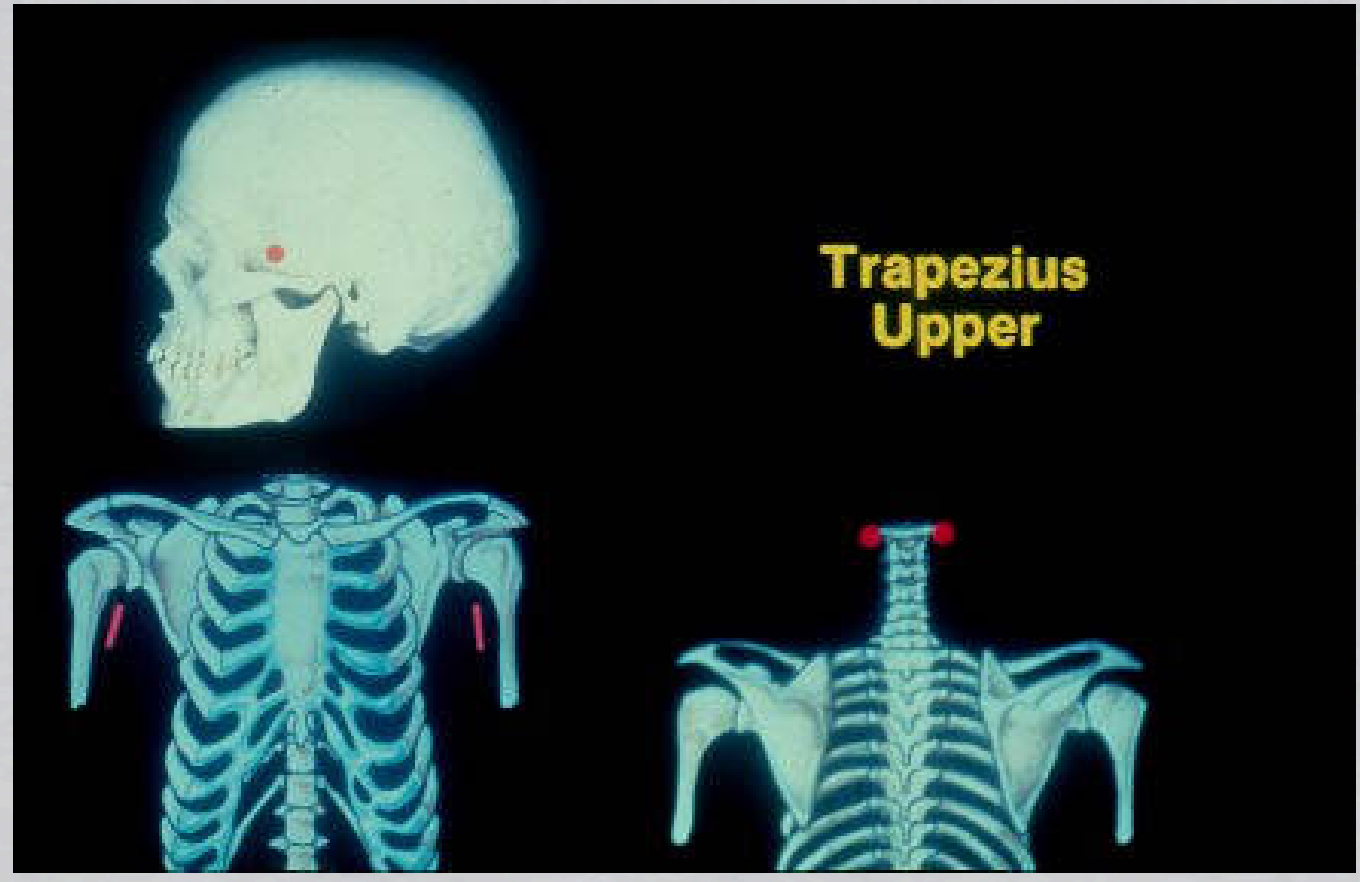
Lung Meridian

Upper Trapezius






Upper
Trapezius
Slight
Head
Rotation
To Right


Trapezius
Upper

Trapezius, Upper



Nerve Supply:
Spinal Accessory
and Ventral Ramus
of C2, C3, C4

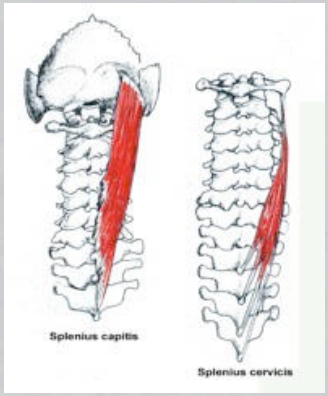
Common Subluxations:
Cervical
Cranial Faults
Assoc. Pt. L2, 3

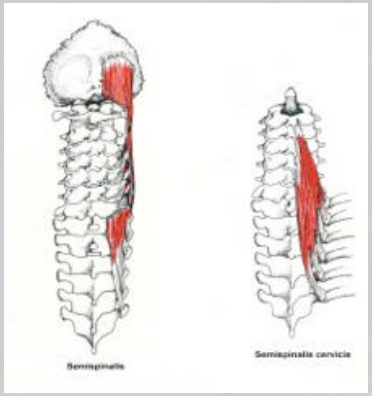
Nutrition:
Vitamins A, B, F,
G, and Calcium

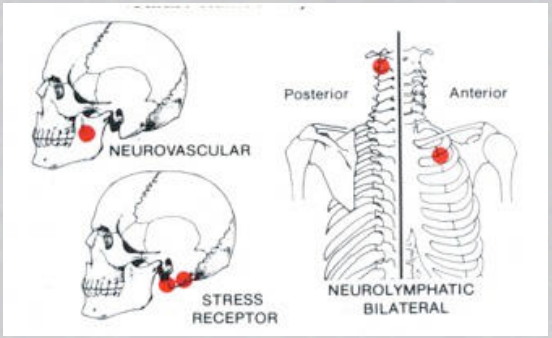
Eye and Ear

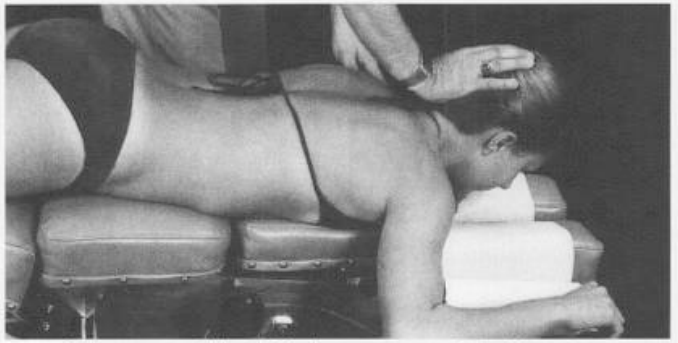
Kidney Meridian

Neck Extensors

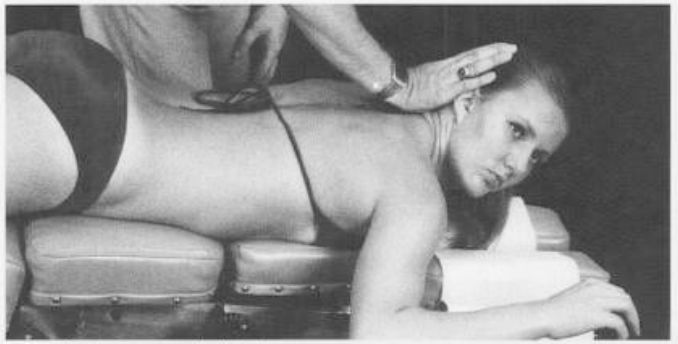






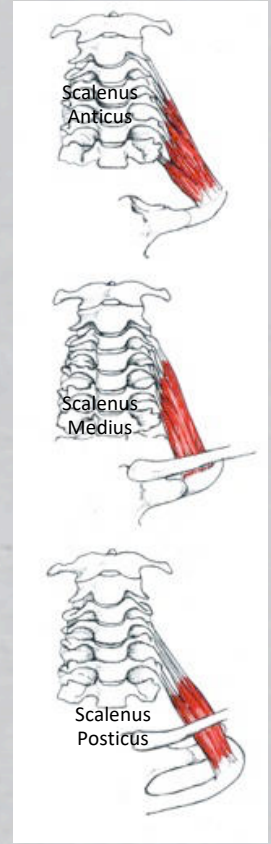


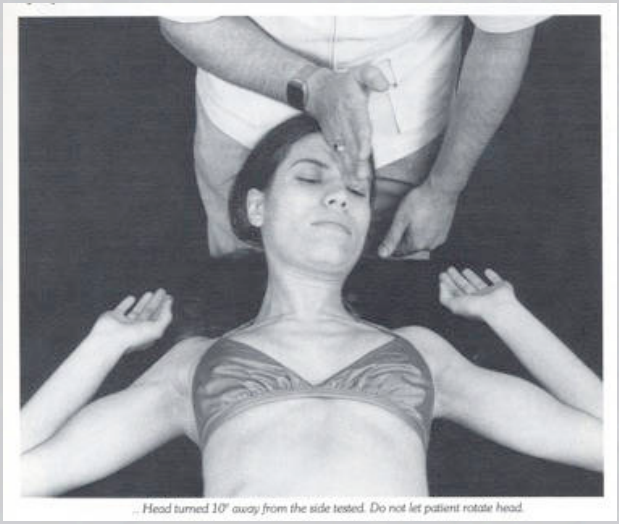
Neck extensors tested bilaterally. Hands are not in contact with the table.

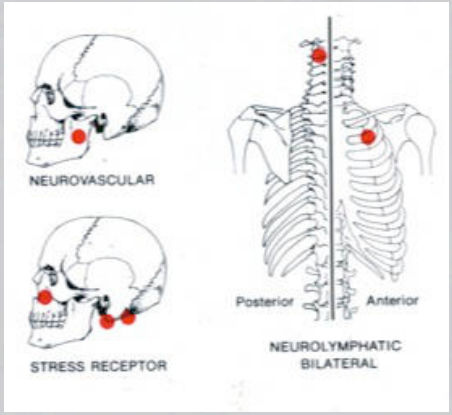


Neck extensors tested unilaterally.

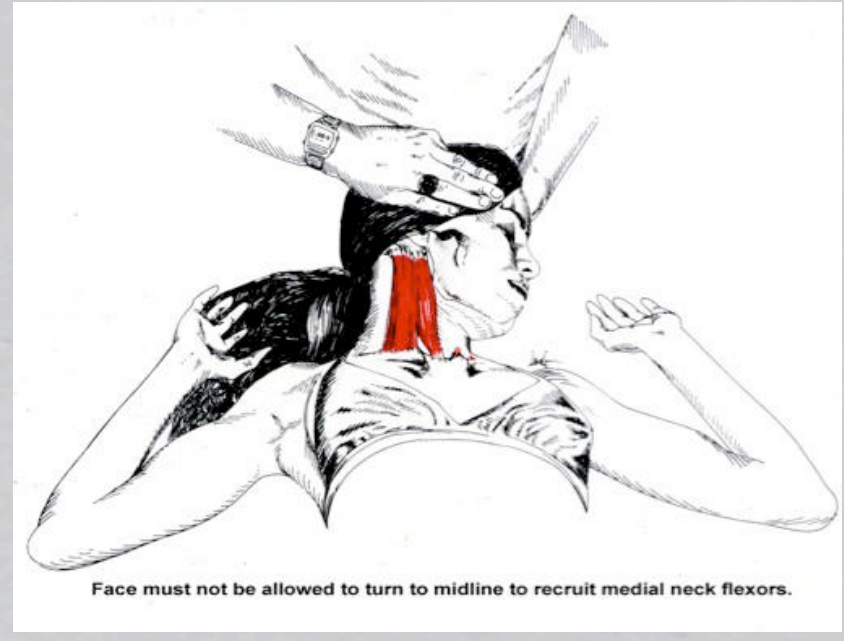
Scalenes



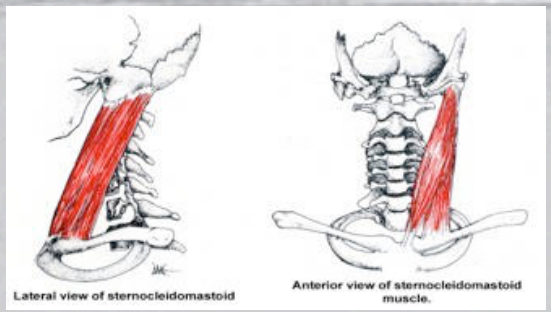

Head turned 10° away from the side tested. Do not let patient rotate head.

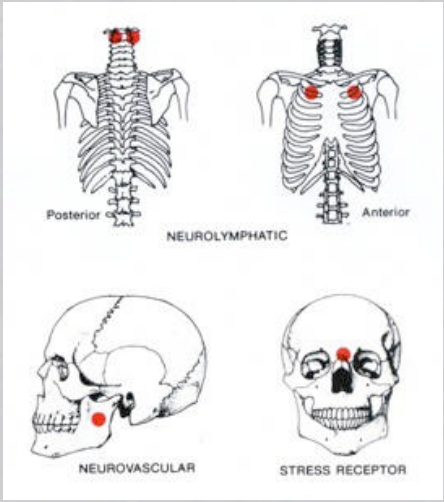


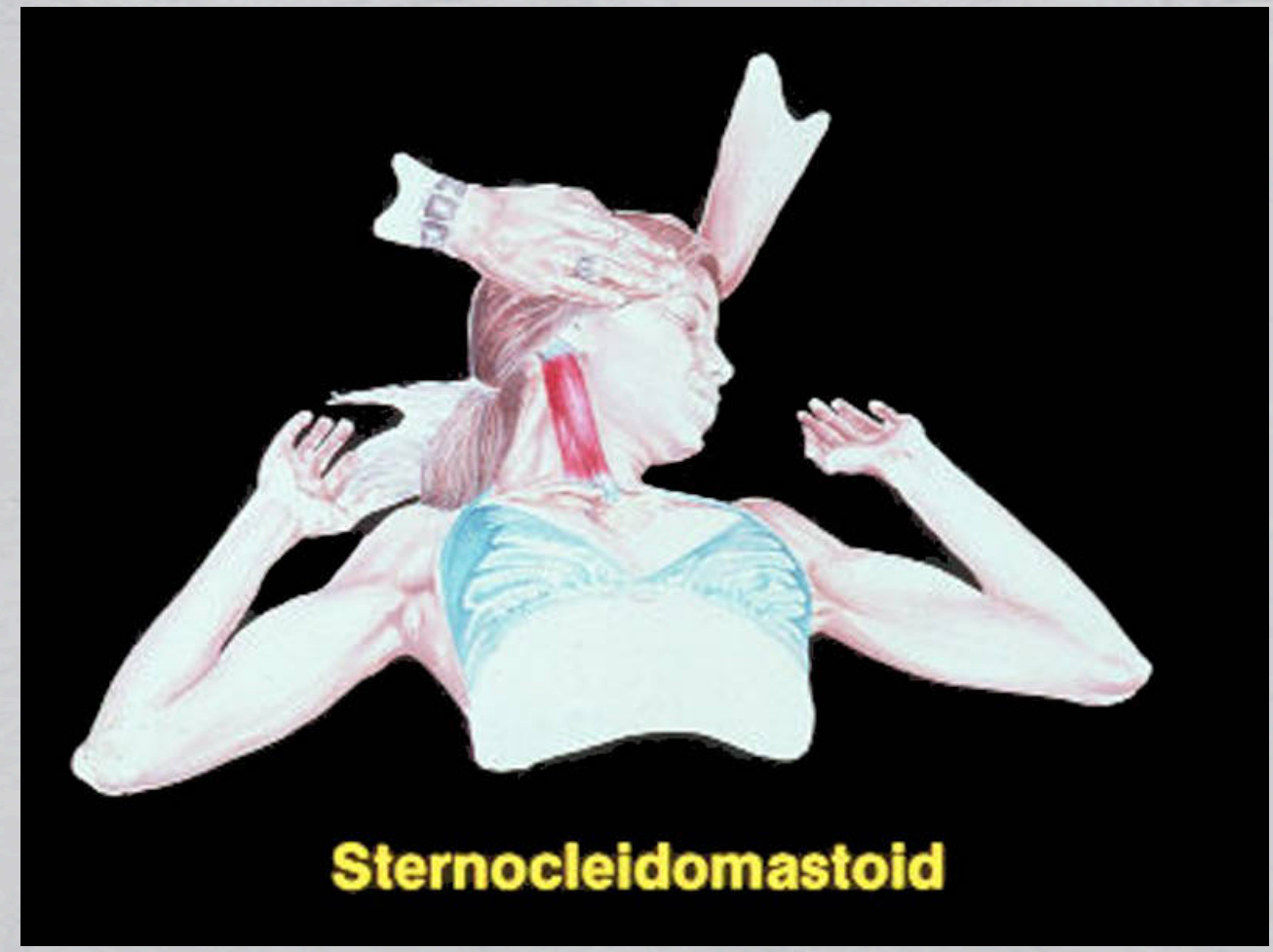
Sternocleidomastoid



Face must not be allowed to turn to midline to recruit medial neck flexors.






Sternocleidomastoid



Sternocleidomastoid



Sinuses

Stomach Meridian

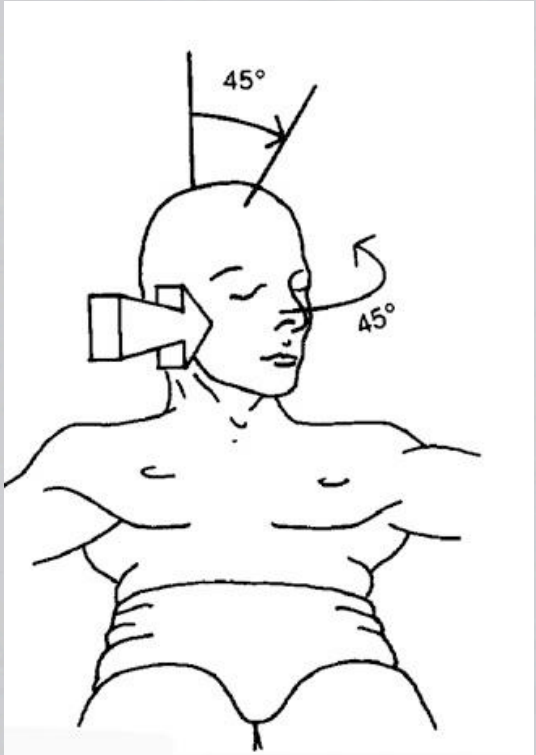
Nerve Supply:
Anterior Rami of C2, C3; Spinal Portion of Accessory Nerve (Cranial XI)

Common Subluxations:
Upper Cervical
Cranial Faults
Assoc. Pt. T12, L1

Nutrition:
Niacinamide or Niacin, Vitamin B_6
For Sinusitis, Organic Iodine

Test

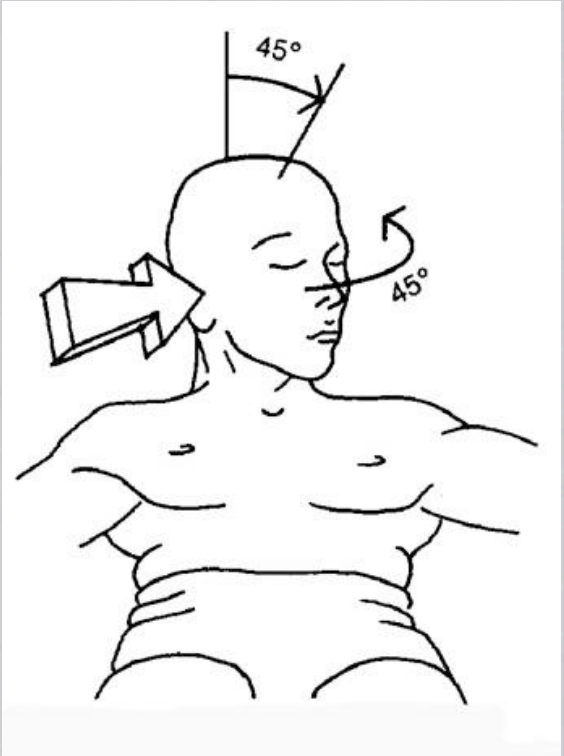
- Patient: Supine, Rotate head 45° from testing side. Flex neck on trunk 45°
- DR.: Place palm of hand over TMJ and temporal bone and extend neck sagittally.



Sternocleidomastoid, Sternal Division

Test

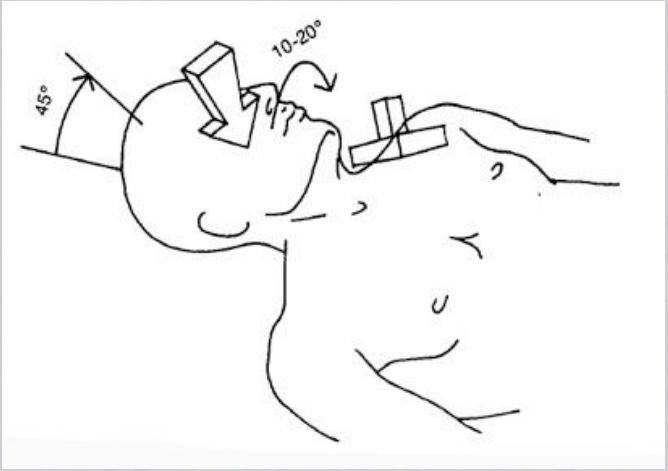
- Patient: Supine, Rotate head 45° from testing side. Flex neck on trunk 45°
- DR.: Place palm of hand around ear and extend neck obliquely toward opposite ear.



Sternocleidomastoid, Clavicular Division

Test

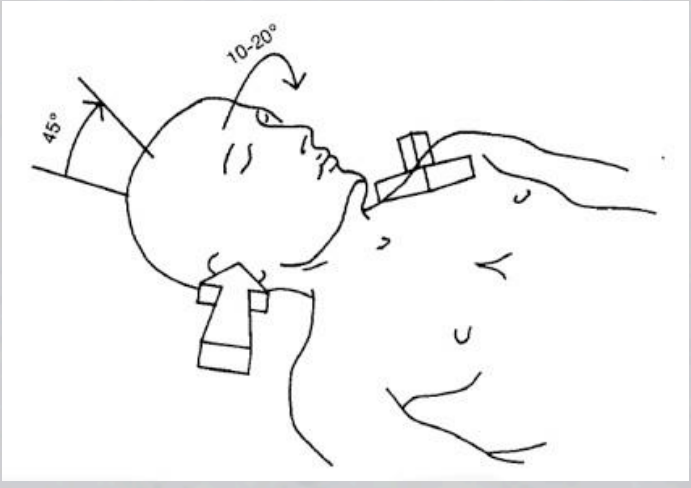
- **Patient: Supine, flex neck on trunk 45°. Rotate head 20° away from side tested. Sagittally extend head on neck.**
- **DR.: Place lateral aspect of hand on maxillary and frontal bone. Sagittally extend neck on truck.**



Scalenus Anterior

Test

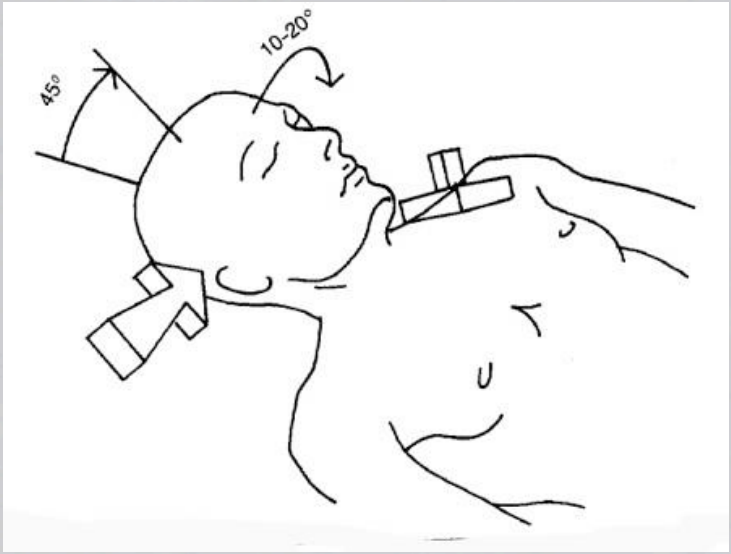
- Patient: Supine, flex neck on trunk 45°. Rotate head 10-20° towards opposite side of test. Coronally extend head on neck.
- DR.: Brace contralateral shoulder, extend neck obliquely.



Scalenus Medius

Test

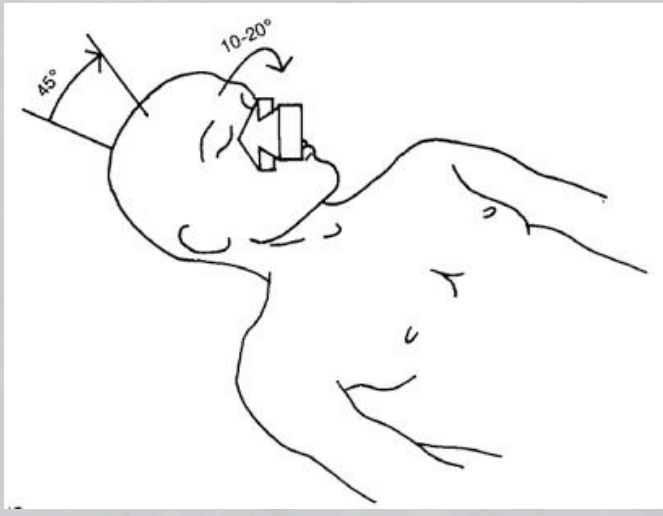
- Patient: Supine, flex neck on trunk 45°. Rotate head 10-20° towards opposite side of test. Coronally extend head on neck.
- DR.: Brace contralateral shoulder and extend neck coronally.



Scalenus Posterior

Test

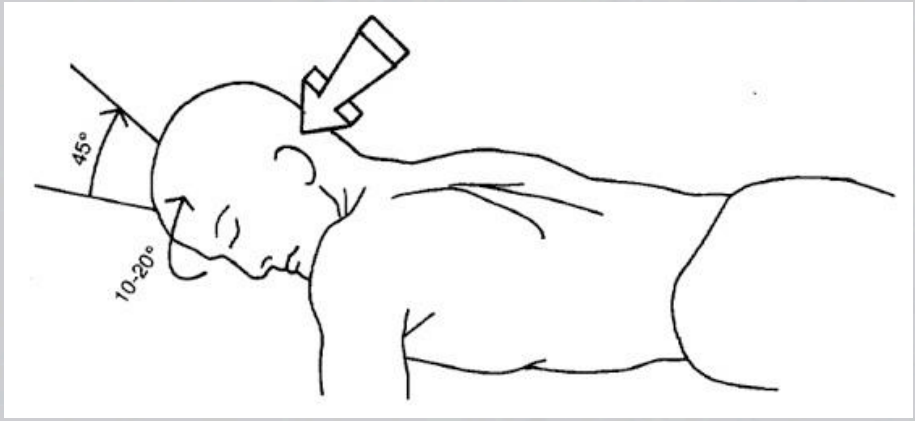
- Patient: Supine, flex neck on trunk 45°. Rotate head 10-20° away from side being tested. Flex head on neck.
- DR.: Brace contralateral shoulder. With lateral aspect of hand on maxillary and frontal bones extend The head on neck, through sagittal plane.



Longus Capitus

Test

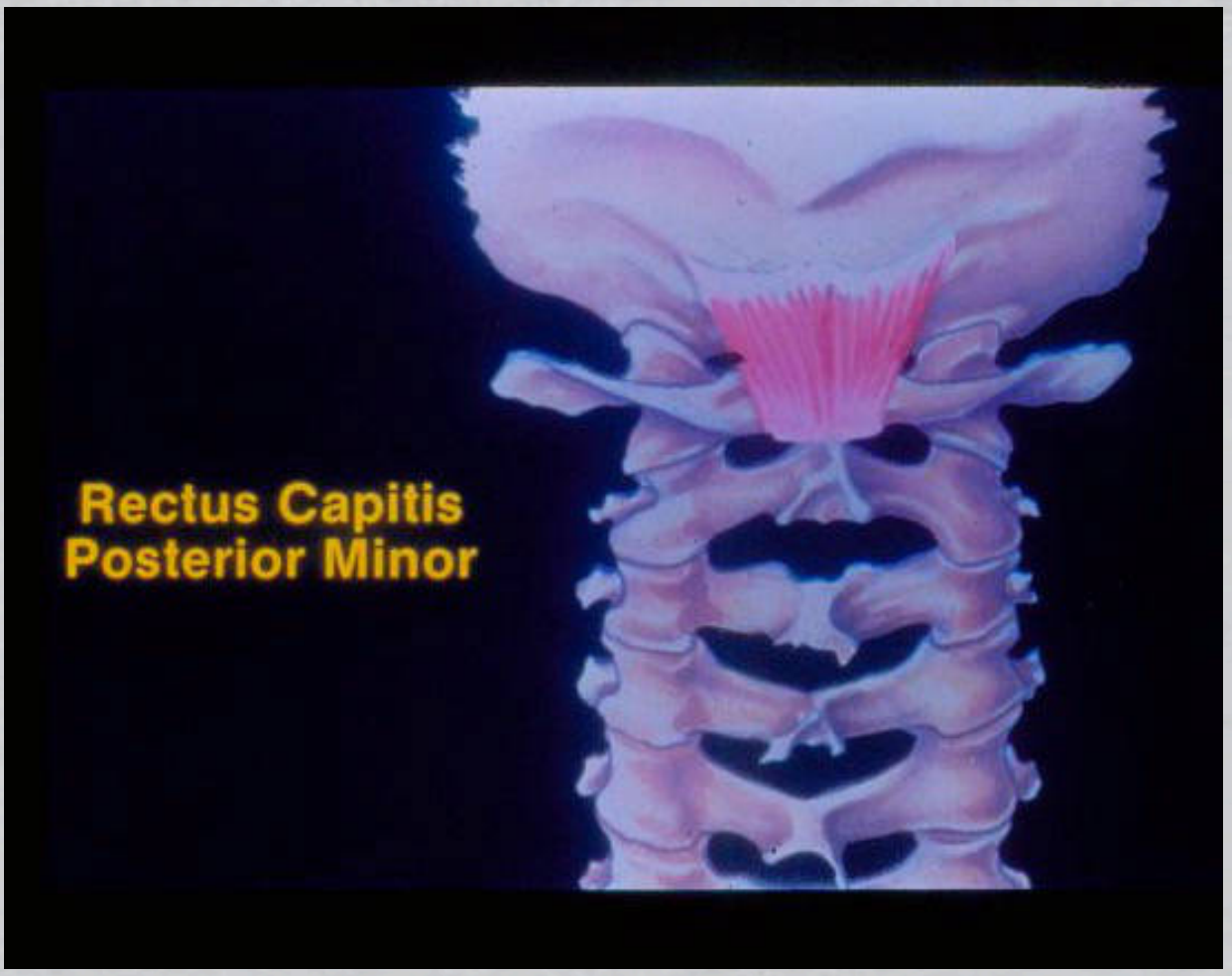
- Patient: Prone. Rotate head 10-20°. Flex head on neck, extend neck on trunk 20°.
- DR.: Flex neck on trunk

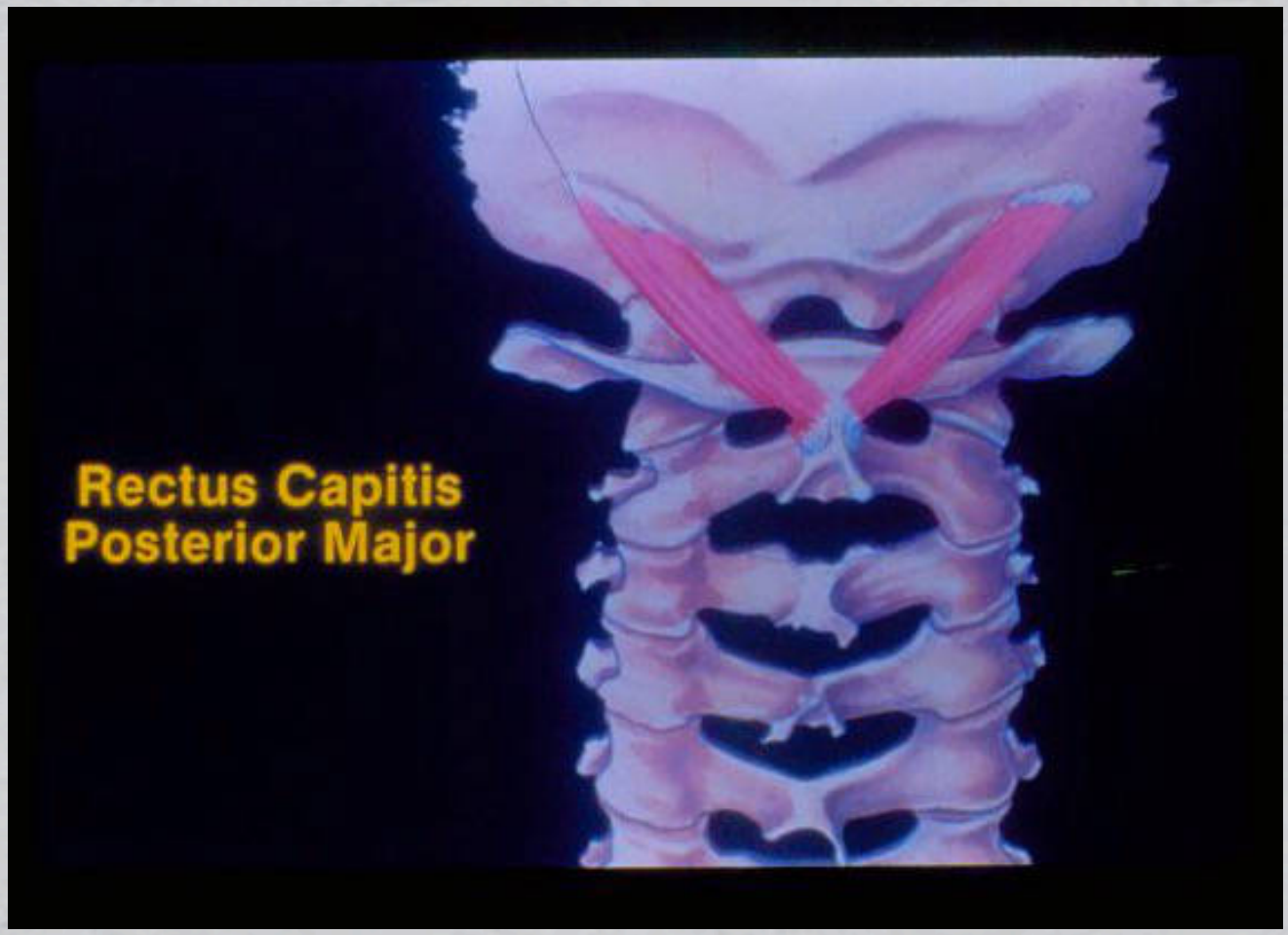


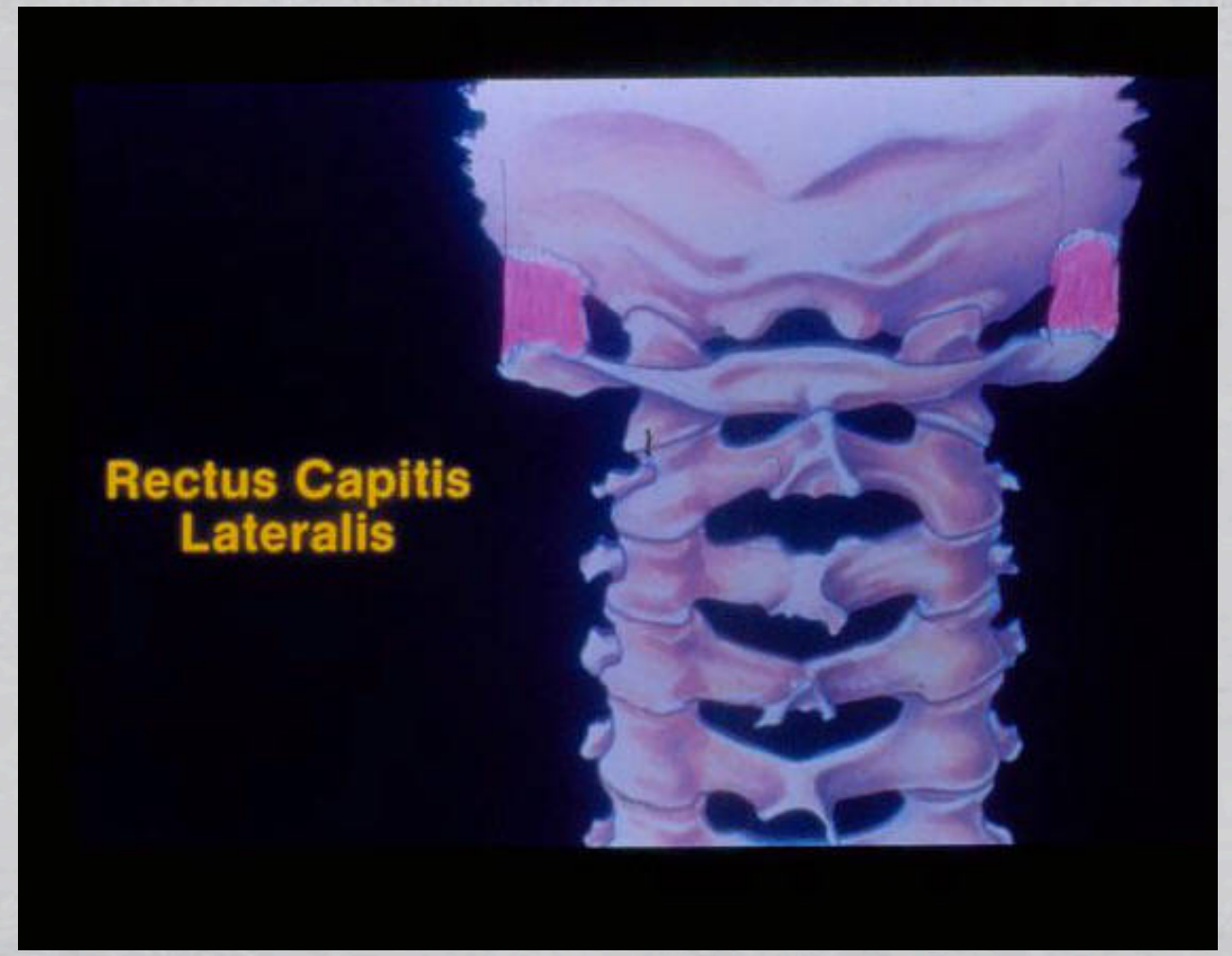
Semispinalis Capitus

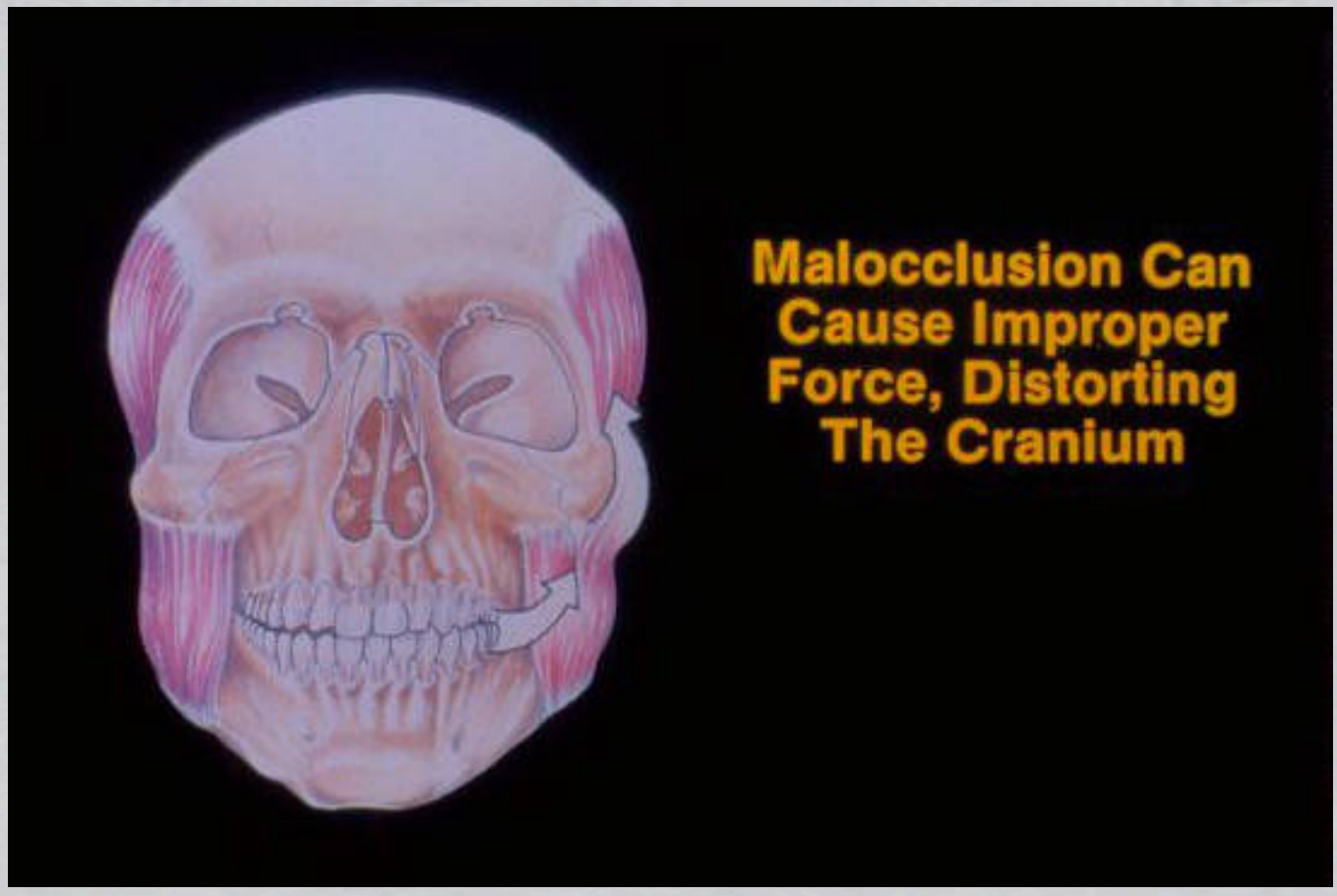

OH NO!
THAT FELIX'S
GONNA HIT ME—
I JUST KNOW IT!
WHAT A JE—

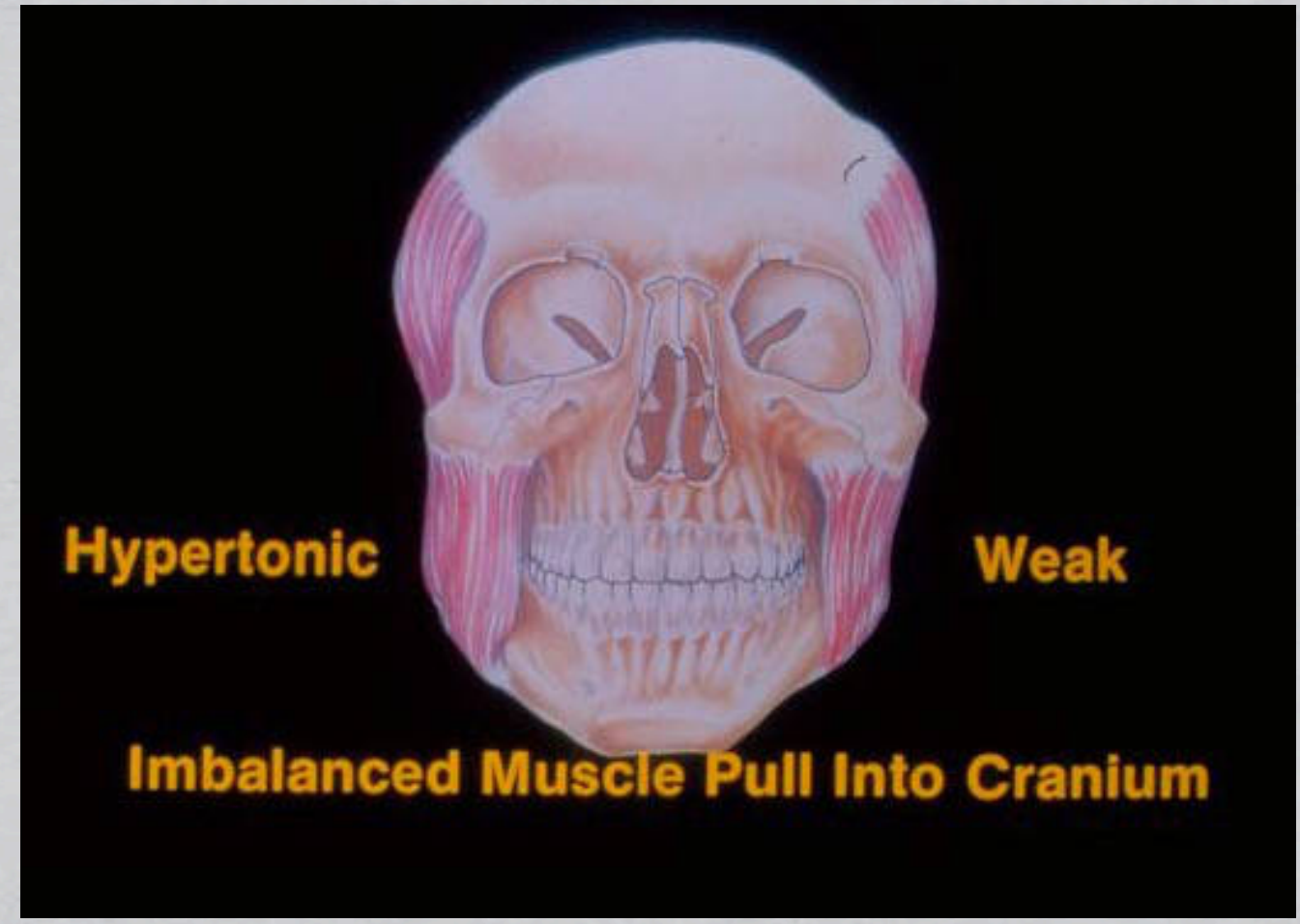

RK!!
WHIPLASH!!


Rectus Capitis
Posterior Minor


Rectus Capitis
Posterior Major


Rectus Capitis
Lateralis


Malocclusion Can
Cause Improper
Force, Distorting
The Cranium


Hypertonic
Weak
Imbalanced Muscle Pull Into Cranium

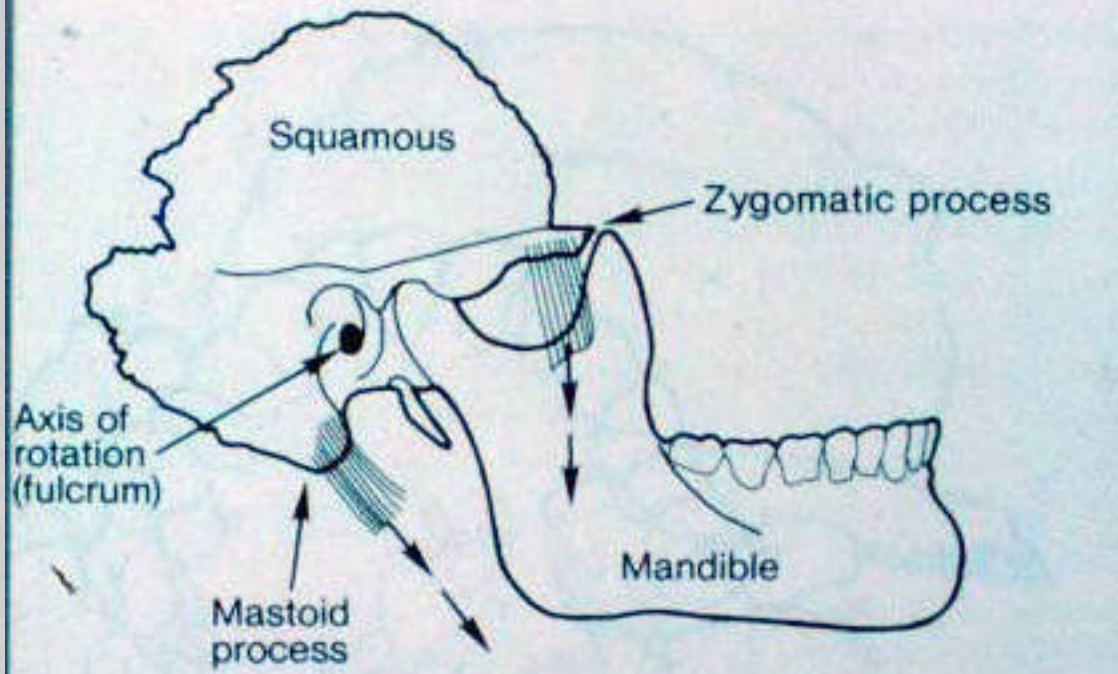
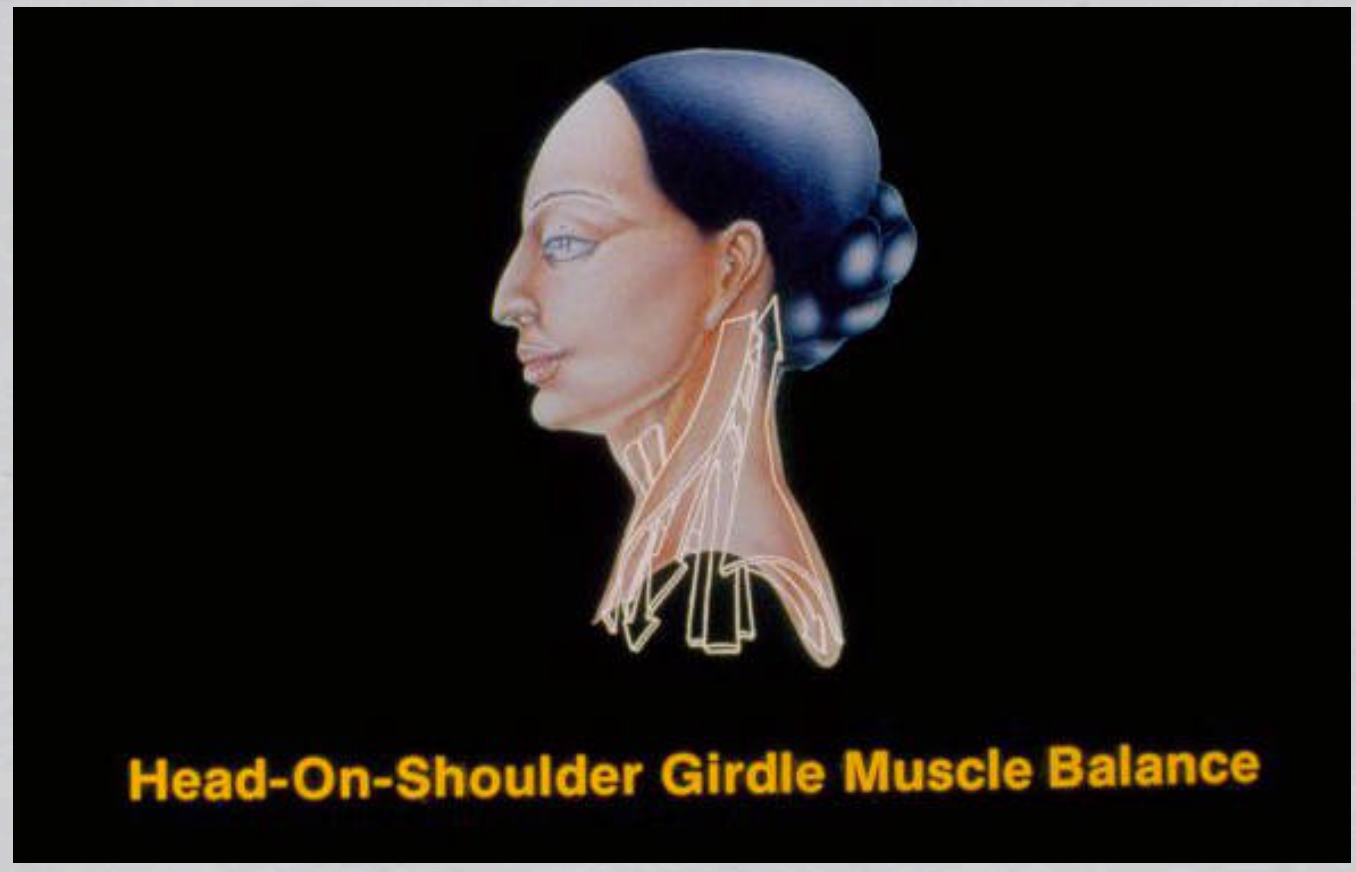
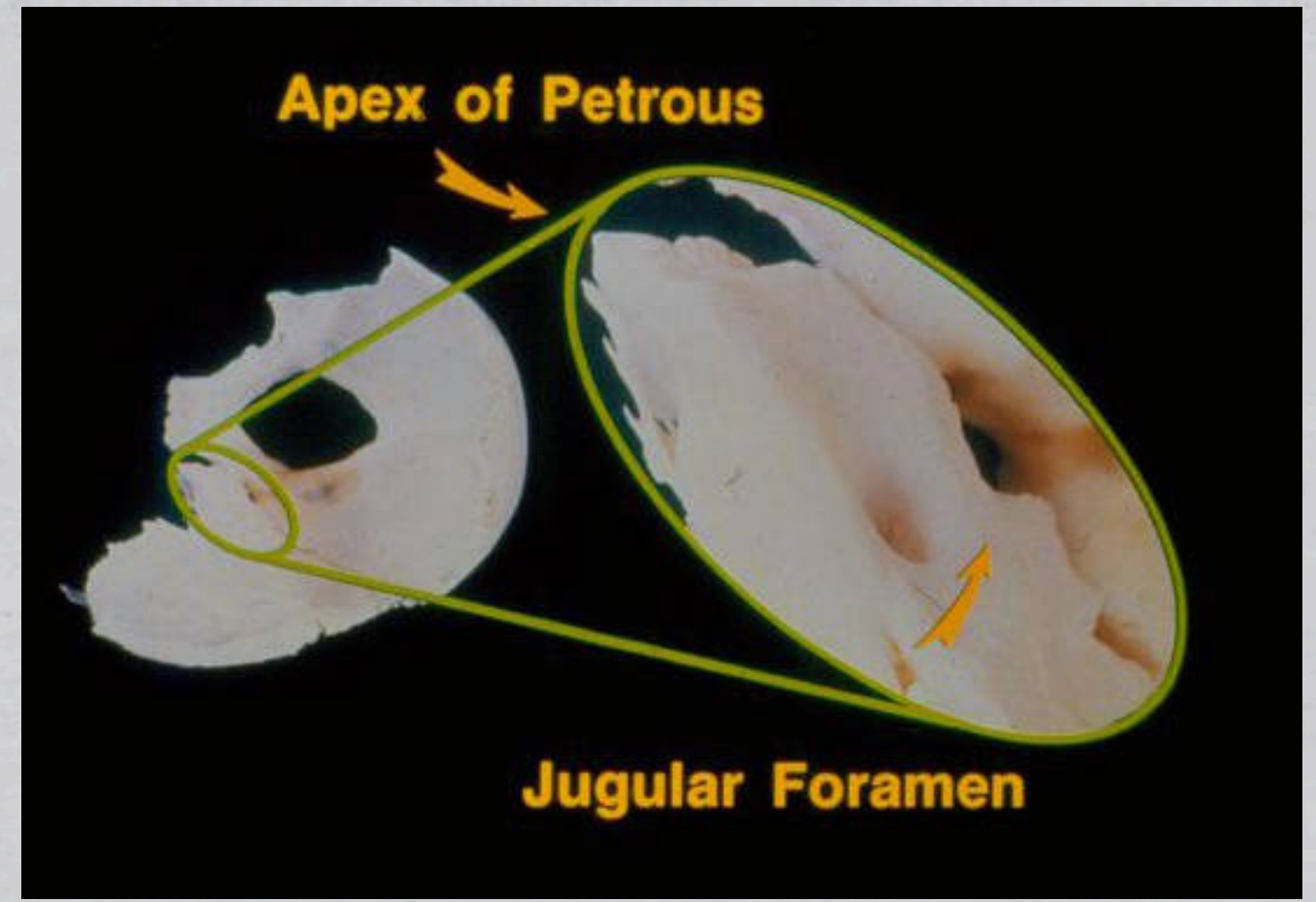
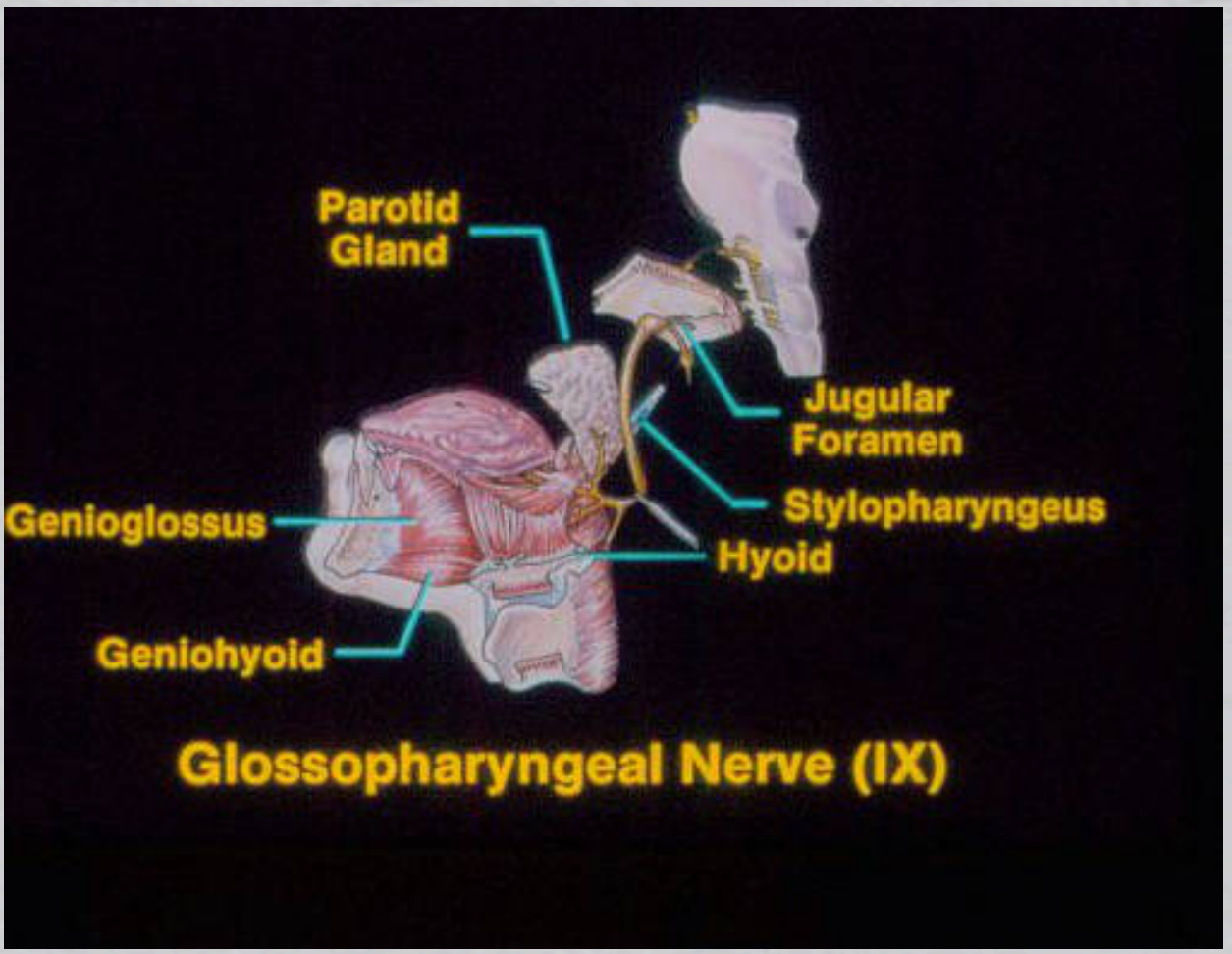


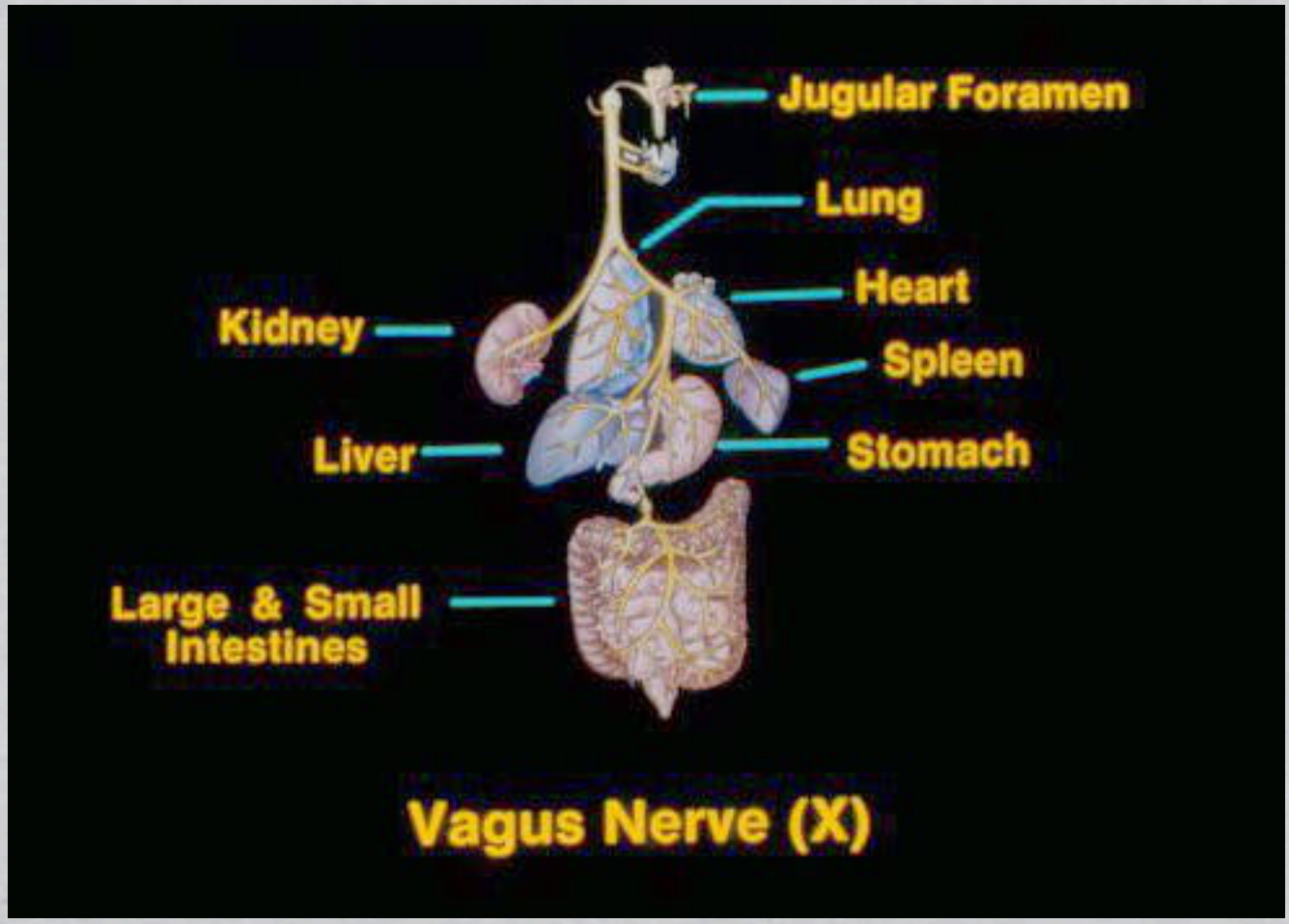
Illustration 11-3
Balance of Muscle Action on the Temporal Bone

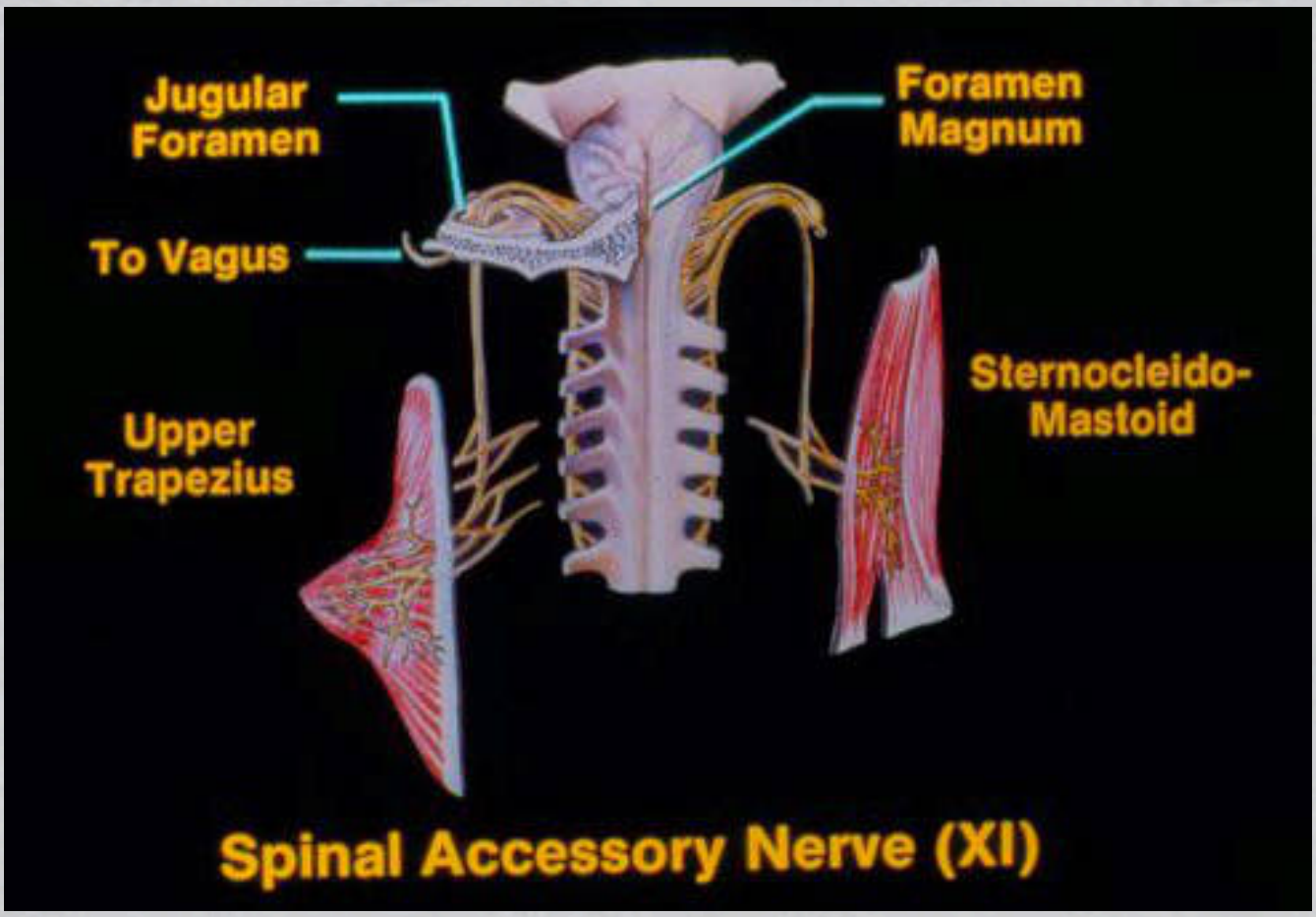

Head-On-Shoulder Girdle Muscle Balance

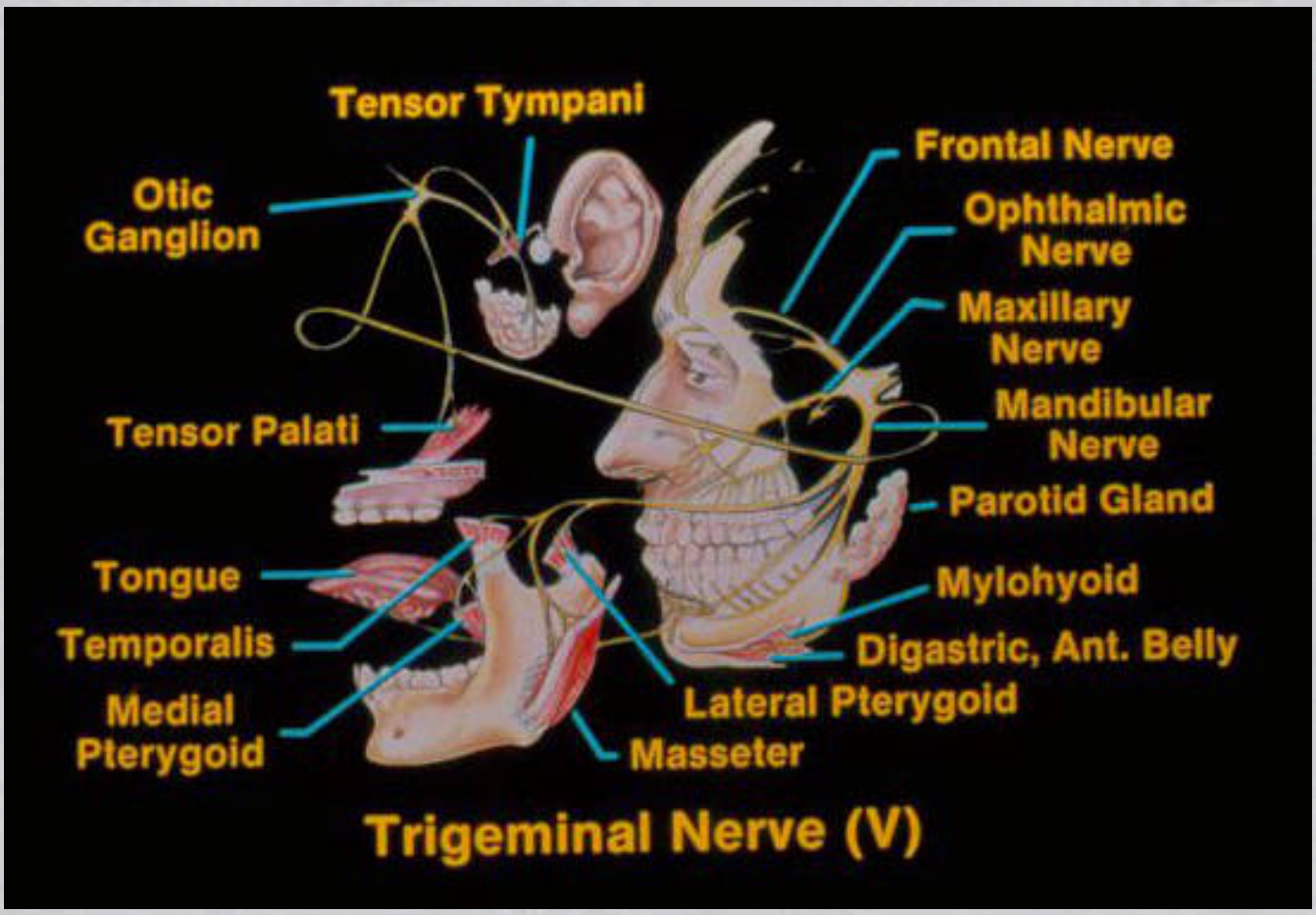

Head-On-Shoulder Girdle Muscle Balance

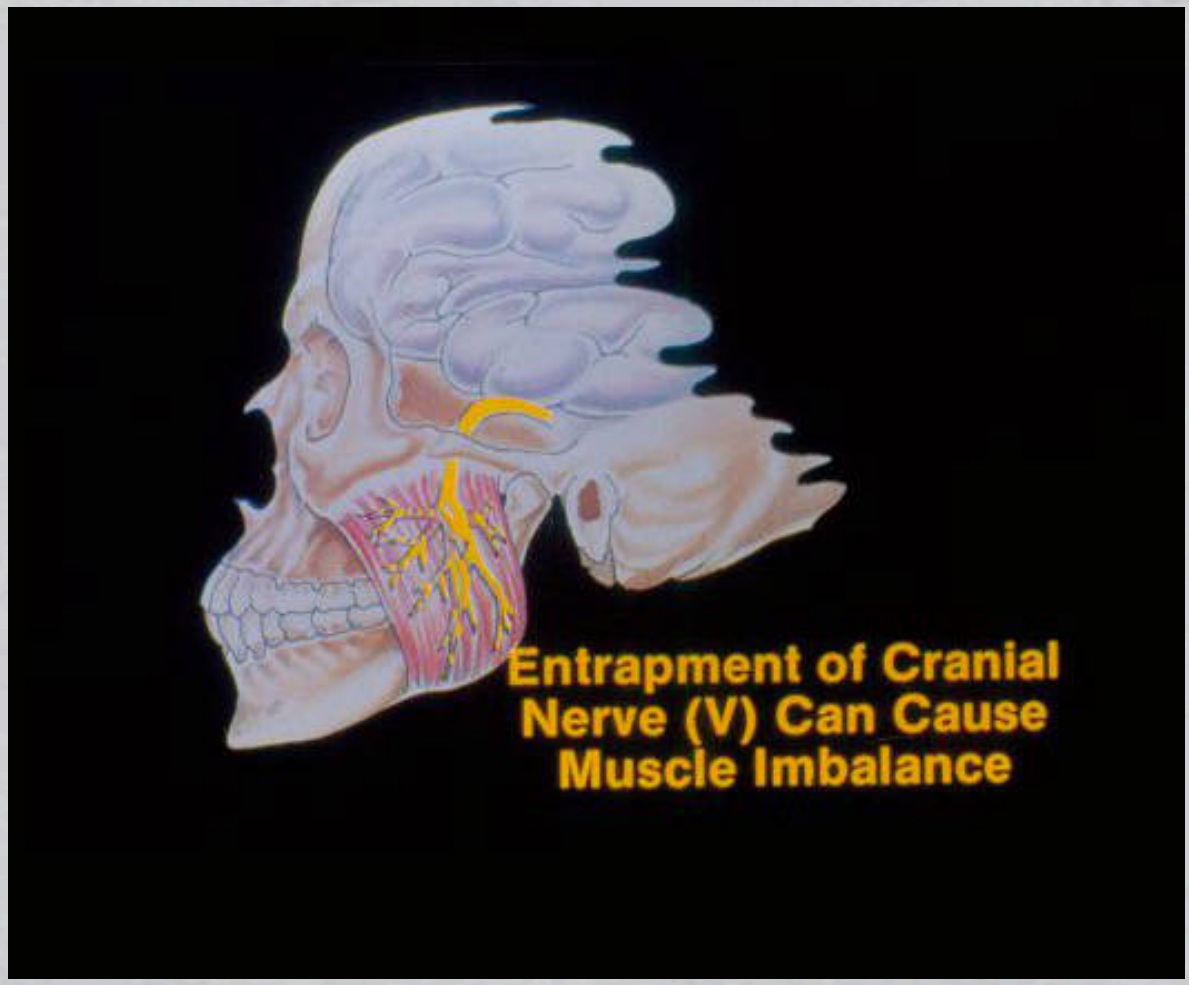

Apex of Petrous
Jugular Foramen


Parotid Gland
Jugular Foramen
Stylopharyngeus
Hyoid
Genioglossus
Geniohyoid
Glossopharyngeal Nerve (IX)

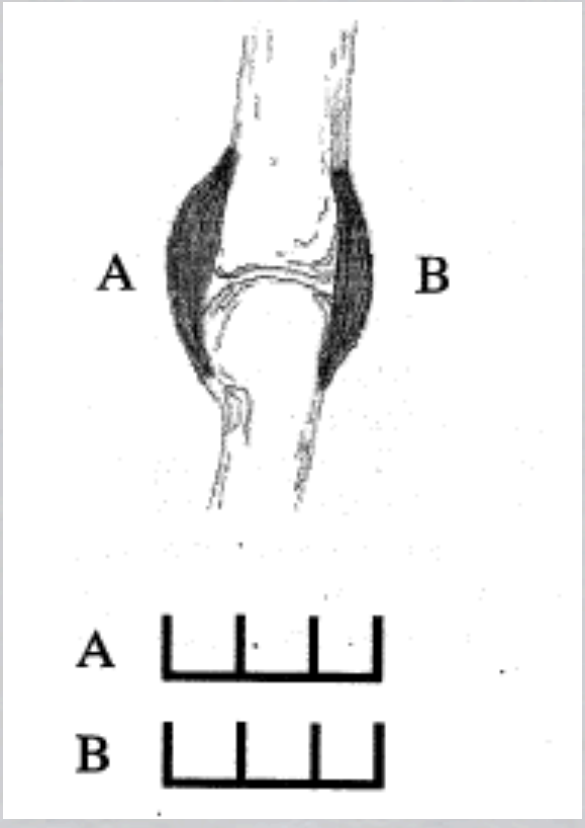

Jugular Foramen
Lung
Heart
Kidney
Spleen
Liver
Stomach
Large & Small Intestines
Vagus Nerve (X)


Jugular Foramen
Foramen Magnum
To Vagus
Sternocleido-Mastoid
Upper Trapezius
Spinal Accessory Nerve (XI)

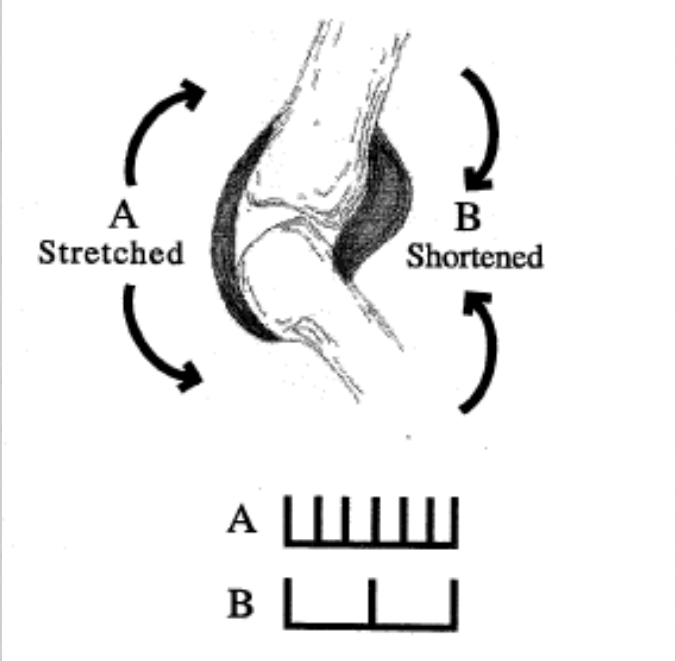

Tensor Tympani
Otic Ganglion
Frontal Nerve
Ophthalmic Nerve
Maxillary Nerve
Mandibular Nerve
Tensor Palati
Parotid Gland
Tongue
Mylohyoid
Temporalis
Digastric, Ant. Belly
Medial Pterygoid
Lateral Pterygoid
Masseter
Trigeminal Nerve (V)


Entrapment of Cranial
Nerve (V) Can Cause
Muscle Imbalance

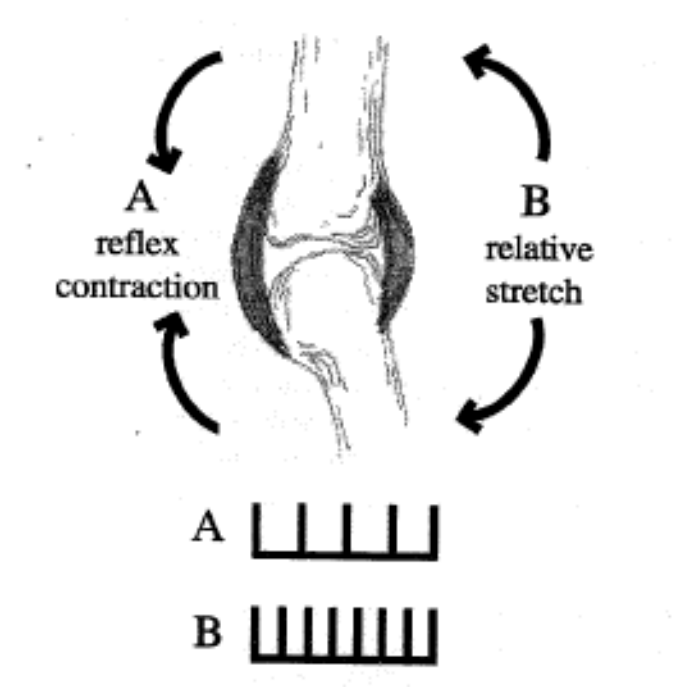

Areas of
Dural
Attachments



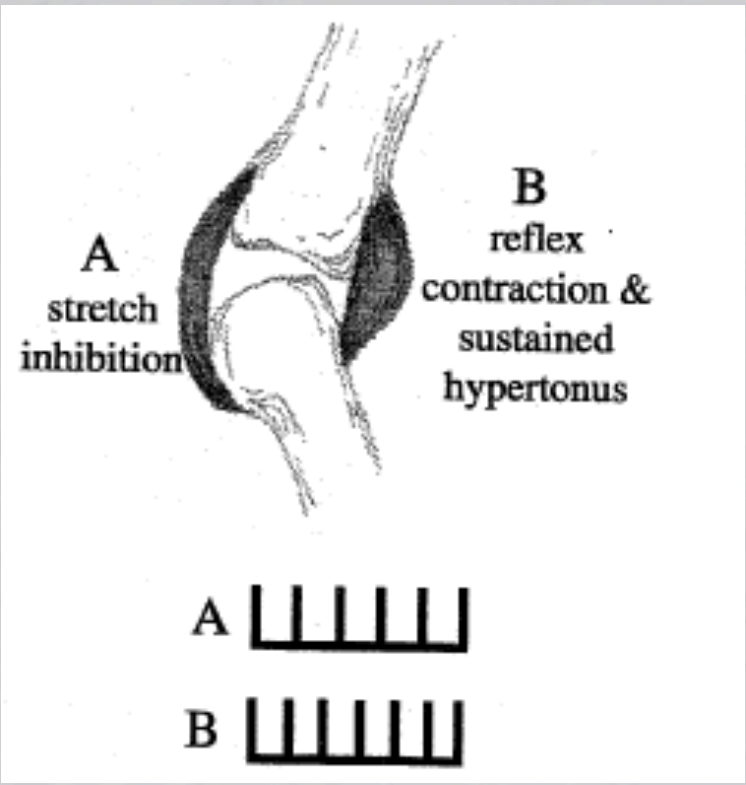
Normal Resting Tone



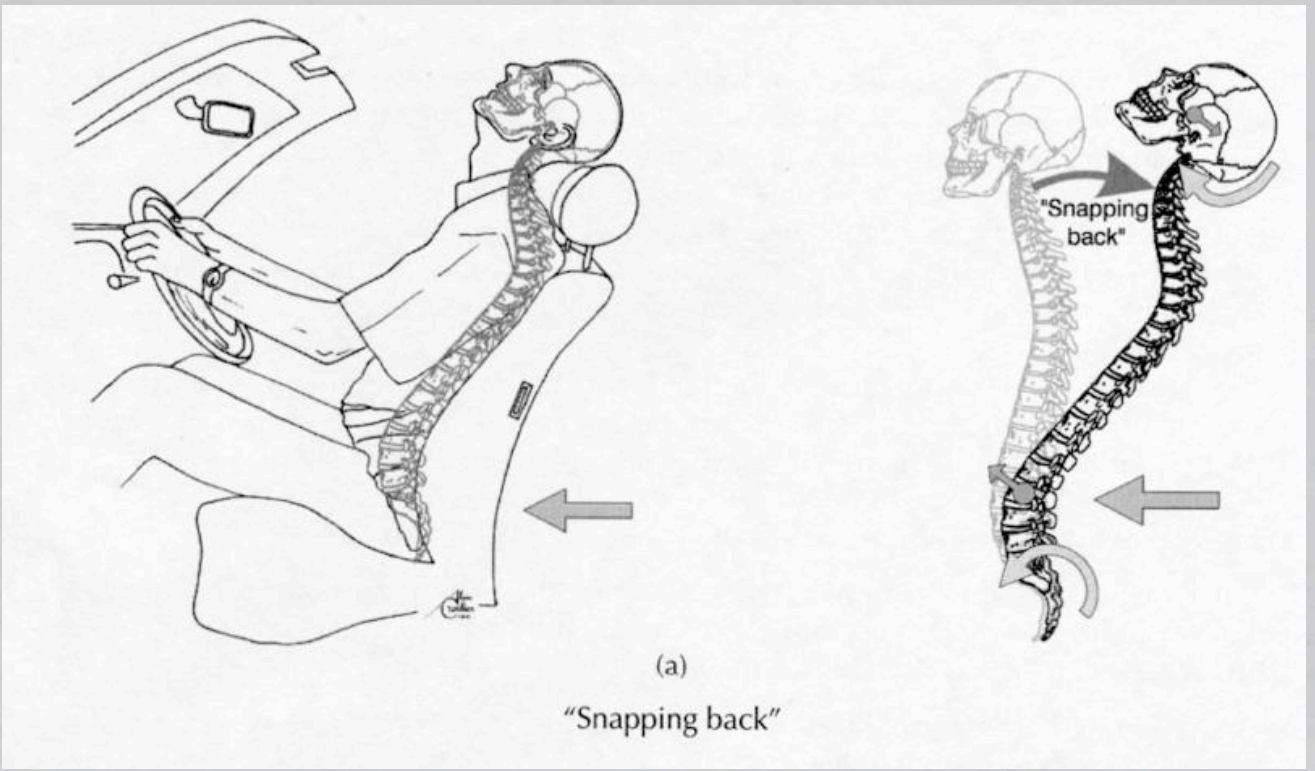
Strain

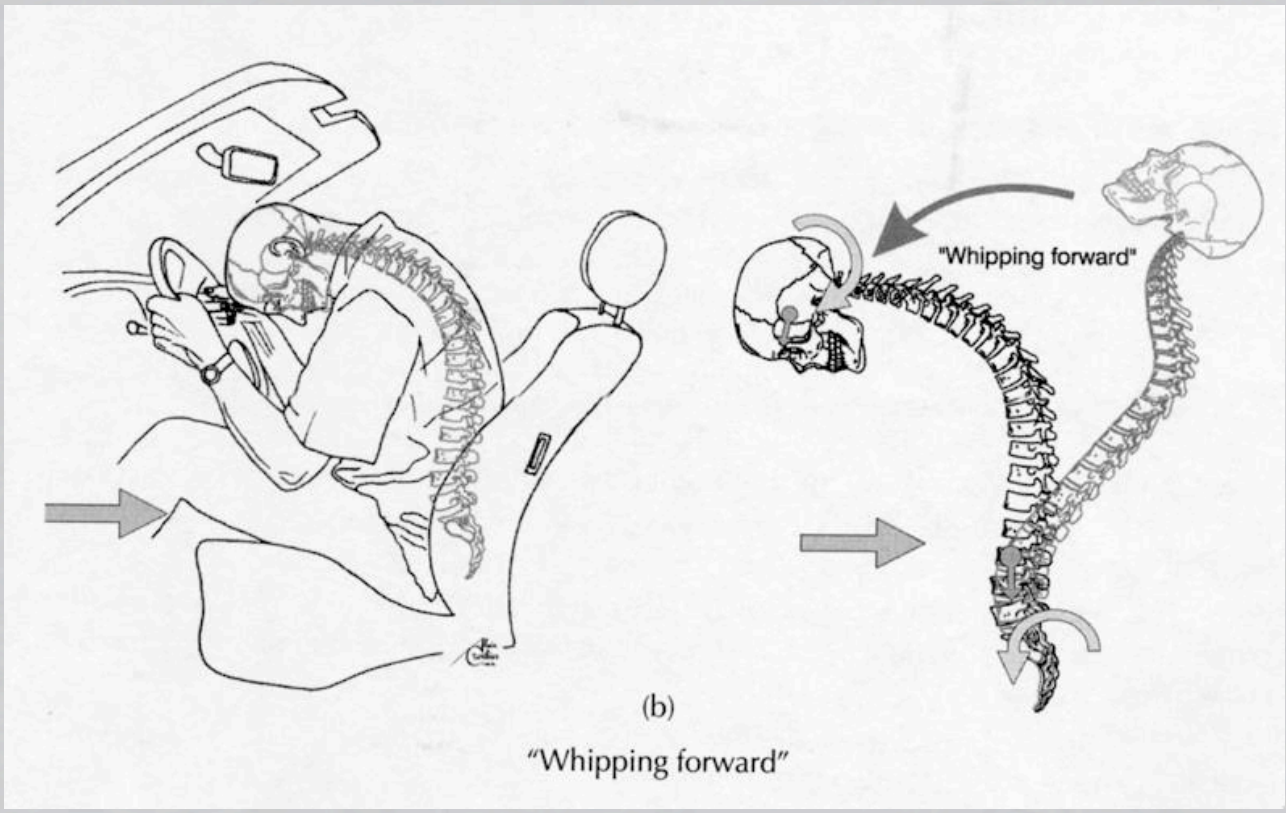


Counterstrain



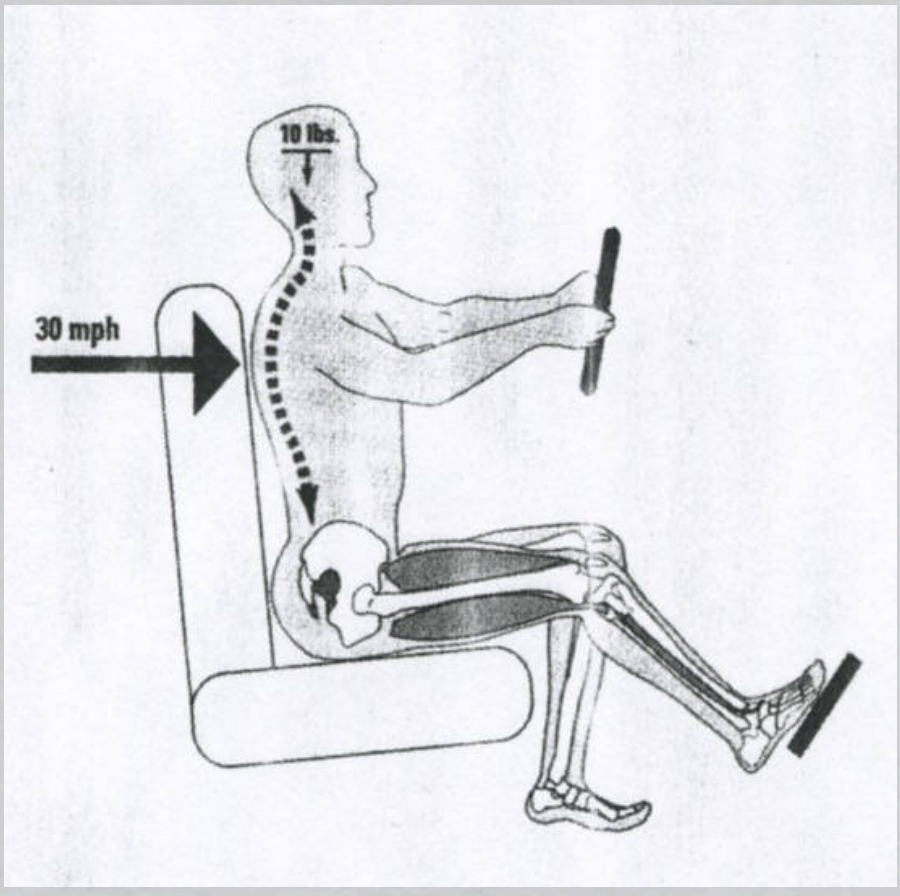
Dysfunctional Resting Tone


"Snapping back"
(a)
"Snapping back"

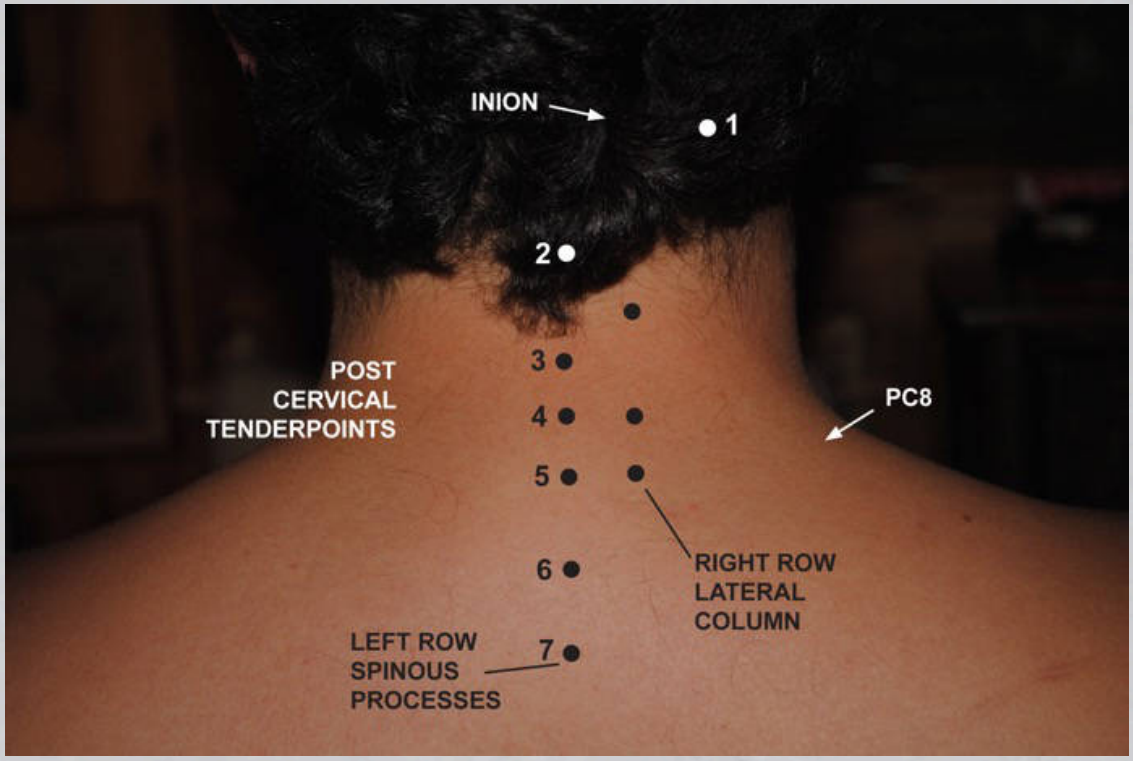


(b)

"Whipping forward"

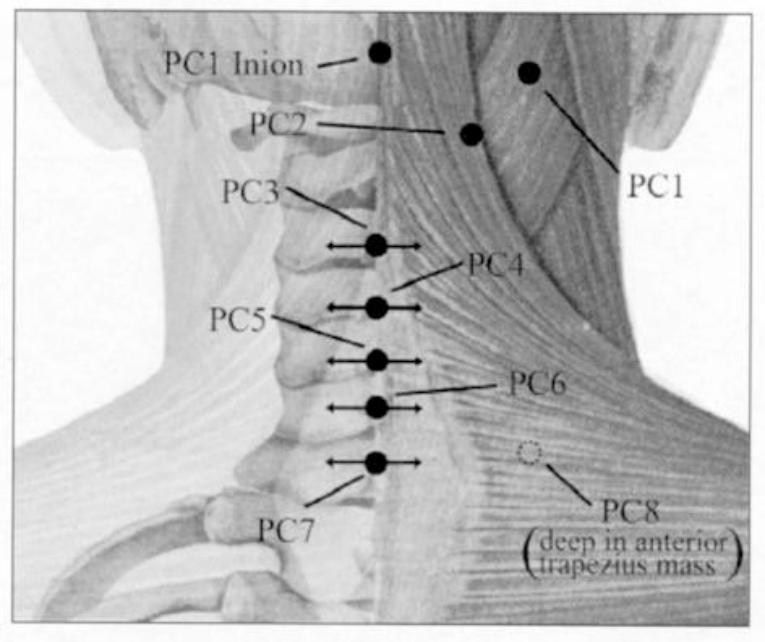

10 lbs.
30 mph

Posterior Cervical Tender Points

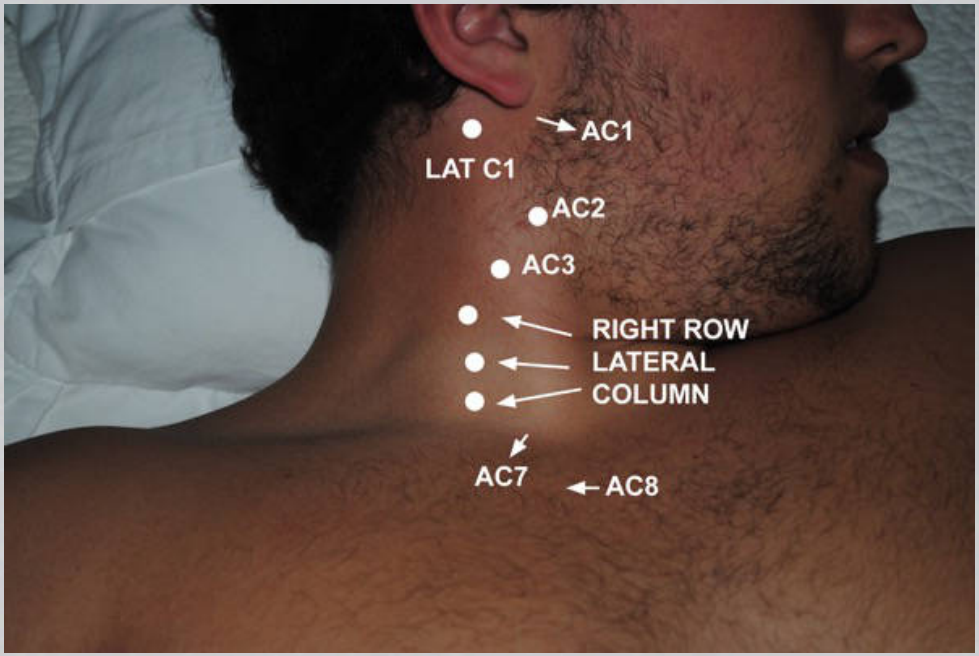


Posterior Cervical Tender Points

Posterior Cervical tender points are usually located at the lateral aspects of the tips of the spinous processes. PC1 Inion is located 2 cm below inion at the medial border of main muscle mass.



Anterior Cervical Tender Points



Posterior C2

Tender point: Superior surface of C2 spinous or in muscle mass at that level

Tx: Extend occiput and C1 on a neutral C-spine



Posterior C3

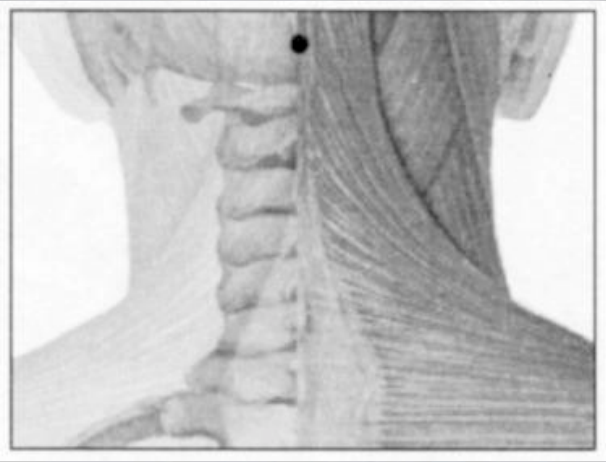
Tender point: Inferior surface of C2 spinous process

Tx: Flexion 45 degrees, sidebend-rotate away from point



PC1 Inion

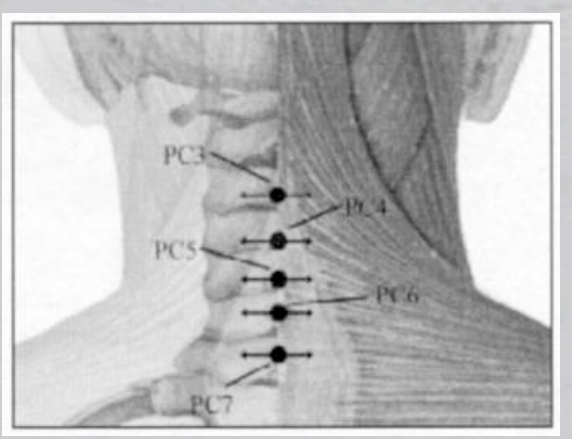
Treatment:
Flexion to barrier.
Sidebend slightly toward.
Rotate slightly away.





PC3-7

Treatment:
Patient's head extended off table.
Extension moderate to extreme.
Sidebend away.
Rotate away.
PC3 (rare)





Anterior C2-C 6

Tenderpoints: Anterior surfaces of transverse processes

Tx: Flexion 45 degrees, sidebend-rotate away from point



Anterior C7

Tenderpoint : 2-3 cm lateral to medial end of clavicle, superior surface * VERY COMMON*

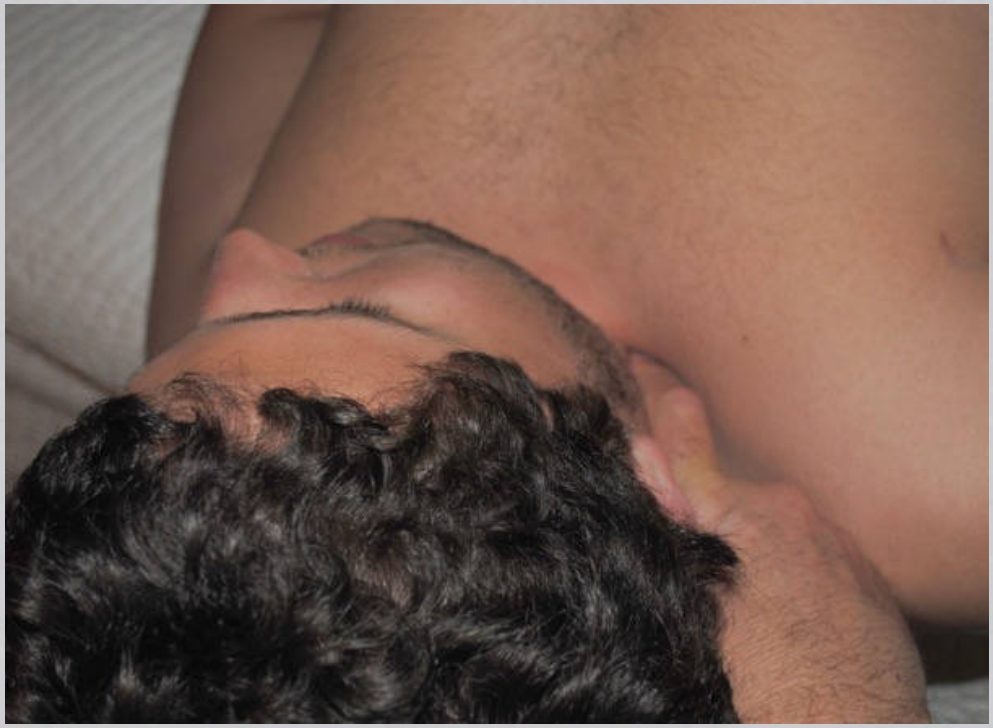
Tx: Marked flexion of neck, slight sidebend toward, rotation away from point



Anterior C8

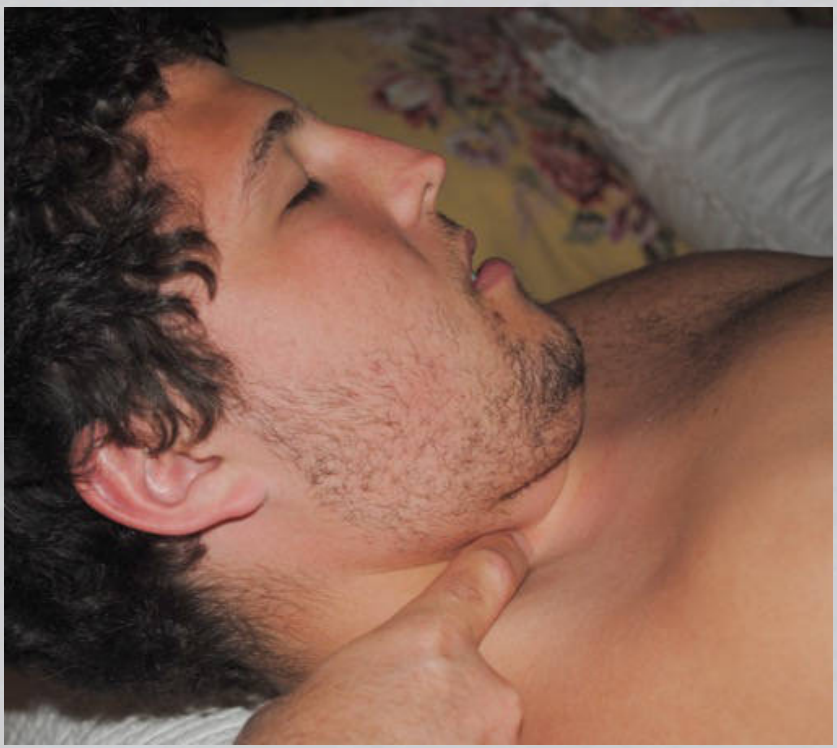
Tenderpoint: Medial end of clavicle/side of suprasternal notch

Tx: Marked neck flexion, sidebend and rotate away from point



Anterior Lateral Columns

Tenderpoints: Anterior surface of cervical laminas * Careful with pressure!
Tx: Marked flexion with rotation away, sidebending slightly towards point



AC1



Approach TP posteriorly.

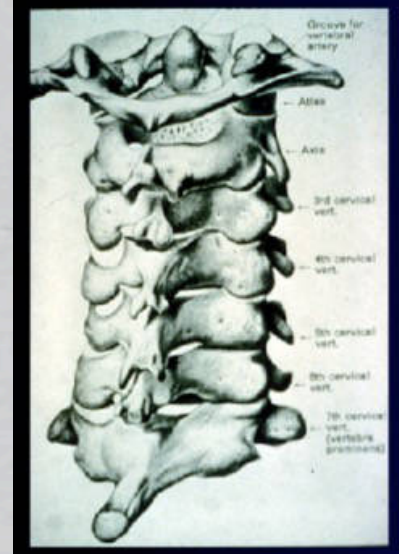
Treatment:
Rotate away markedly.
Side bend away slightly.
Flexion/extension minimal.



Contacting articular pillars



Use pars interarticularis for lateral translation tests.







Interpret C2-7 Restricted Right Lateral Translation

- FSU tested while flexed (not hyperextended):
  - Segment ERSR
  - Right facet flexion blocked
- FSU tested while extended (not hyperflexed):
  - Segment FRSR
  - Left facet extension blocked

If right translation is restricted in both flexed and extended testing positions, it is most likely that the testing position was not enough flexed or extended to find the neutral, free-motion range. Alternatively, there could be dysfunction on both sides of the FSU, facets extended on the right and flexed on the left.

Recumbent Treatment of C3 for FRSR

- Palpate the left articular pillars of C3 and C4 with two finger pads.
- Put facet joint in its neutral range.
- Sidebend to its barrier by translating C3 to the right.
- Use isometric flexor contractions.



Recumbent Treatment of C3 for ERSR

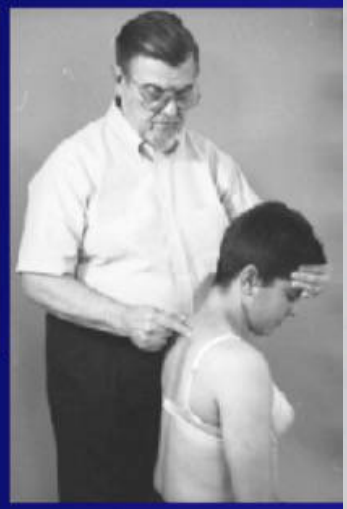
- Palpate right articular pillars of C3 and C4.
- Rest thumb on left articular pillar of C3.
- Extend to the free-range of the FSU facet.
- Translate C3 to the right to sidebending barrier.
- Use isometric extender contractions.



Seated Treatment of C6 for FRSR







LONGUS COLLI TECHNIQUE:

- Start in facet neutral.
- Localize sidebending only, until release is obtained.
- Use 6 ounce isometric flexion effort 1 or 2 seconds.
- Relocalize sidebending. Repeat 2-3 times.
- After sidebend release, rotate left and extend.

Upper Extremity Pearls

Upper extremity problems may be locally and/or distally induced and perpetuated

Always evaluate the whole patient/whole body for somatic dysfunctions of the spine, ribs, cranium, pelvis, sacrum and lower extremities

Muscle testing helps identify the source of many problems. It helps to gauge the success of treatment by testing pre and post muscle response

Many upper extremity **issues come from cervical and upper thoracic/rib** somatic dysfunctions

Think brachial plexus trouble makers (cervical spine, T1, scalenes, upper ribs)

Upper Extremity Pearls

Multiple reflex systems affect the upper extremity **from the opposite side of the body:**
Muscle Interlink
Ligament Interlink
Gait Reflexes/Brain Cortex
Acupuncture Meridians: Inverse /Contrary pairings
Shoulder = Opposite Hip
Elbow = Opposite Knee
Wrist = Opposite ankle
Fingers = Opposite toes
Upper Extremity = Opposite Cortex (80%)

Yang Meridians run from fingers to face (Large Intestine - Small Intestine - Triple Warmer)

Yin Meridians run from trunk to fingers (Heart – Lung – Pericardium)

Upper Extremity Pearls

Organ and meridian disturbances create upper extremity problems by referral through reflexes and channels

Poor posture/poor ergonomics are a form of repetitive stress on the upper extremity in addition to typical repetitive stressors

Stretching and strengthening is essential for total recovery

Worksite evaluations are very appropriate and helpful. Occupational Therapy is invaluable with many tough cases

Ask patient about **job, cell phones , keyboarding, mouse, one sided carrying habits**

Often Cranial/TMJ involvement:

Screen with Applied Kinesiology Protocols
Breathing patterns– use upper extremity muscle group
TMJ Protocol- use upper extremity muscle group

Specific Pearls:

Weak Adductor: Same side of chronic elbow problem (use neurolymphatic reflex) *** Goodheart**

Medial ulna subluxation: causes **chronic subscapularis weakness** and perpetuates **medial epicondylitis**

Radial head restriction: causes or perpetuates **wrist issues** and **lateral epicondyle** problems, biceps tendonitis

T12-L1 spinal fixation: causes **B/L lower trapezius weakness** which disturbs scapular function and contributes to **upper trapezius tension**/trigger points

Latissiumus Dorsi: can come from cervical somatic dysfunctions (innervation) or thoracic, lumbar or sacral dysfunctions (origin of Latissimus)

Specific Pearls:

Levator scapula: sensitive to calcium metabolism/parathyroid, **torticollis.**
Use neurolymphatics aggressively consider nutrition

SCM/Upper Trapezius: Innervation **CNXI** (jugular foramen)/**Cranial**

Superior 1st rib dislocation: Pain/numbness down arm into hand

Persistent shoulder problems: Often undiagnosed visceral restriction of liver, lung, pleura, heart, pericardium or diaphragm. Consider when everything else has failed with traditional physical therapy

Carpal Tunnel Syndrome: Usually a continuum from C-spine/thoracic inlet
Boggy lymphatics, B6 deficiency or thyroid problem
Give patient the Dr. Sucher myofascial stretches for carpal tunnel
Interosseous forearm strain: do indirect release

Specific Pearls:

Pectoralis Minor: Often short tight or weak: important for lymphatic drainage

Retrograde lymphatic test and techniques

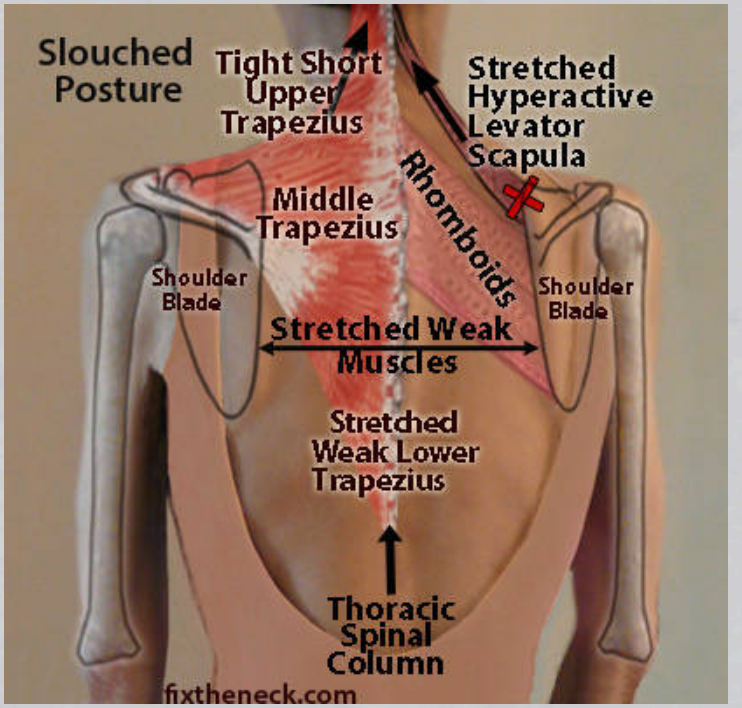
Must free diaphragm for all chronic shoulder problems

Subclavius often involved when patient can not put humerus next to their ear. **Last part of frozen shoulder cases**

Motion loss in minor movements cause loss of major movements (e.g. elbow flexion/extension affected by lateral glides and rotation of elbow)

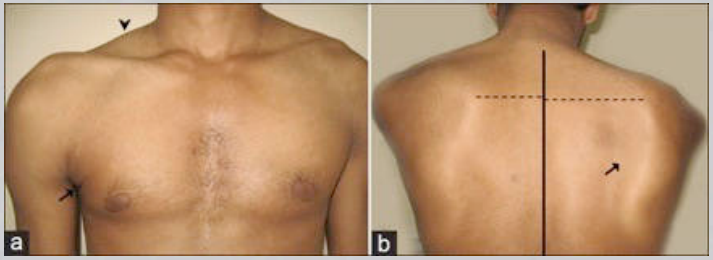
***More will come spontaneously during the course get ready!**

Winged Scapula Shoulder Dysfunction – Muscle Inhibition

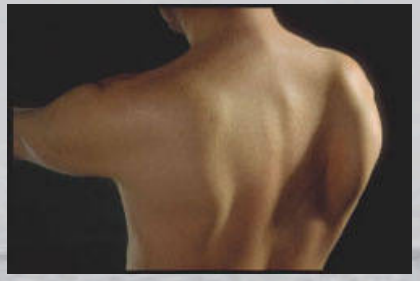


Muscle Inhibition – COMMON
Key Factor in Joint Dysfunction and Pain

- Spinal Accessory n. injury - RARE

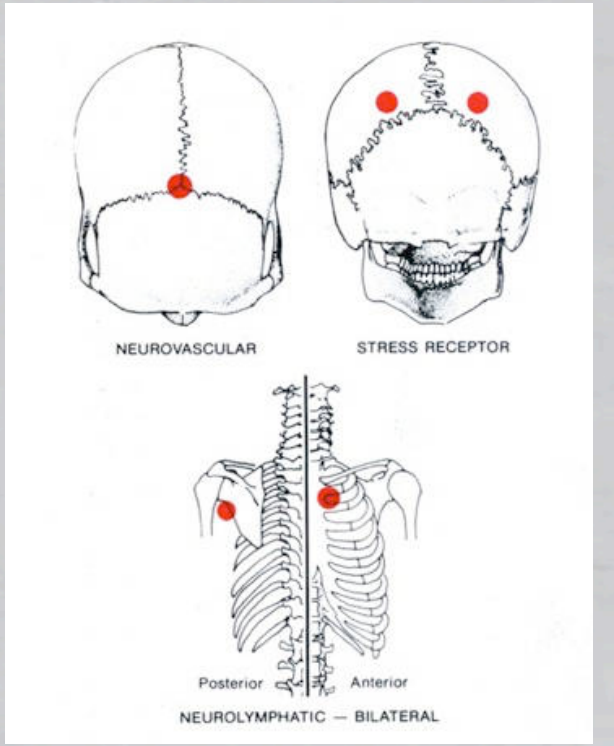


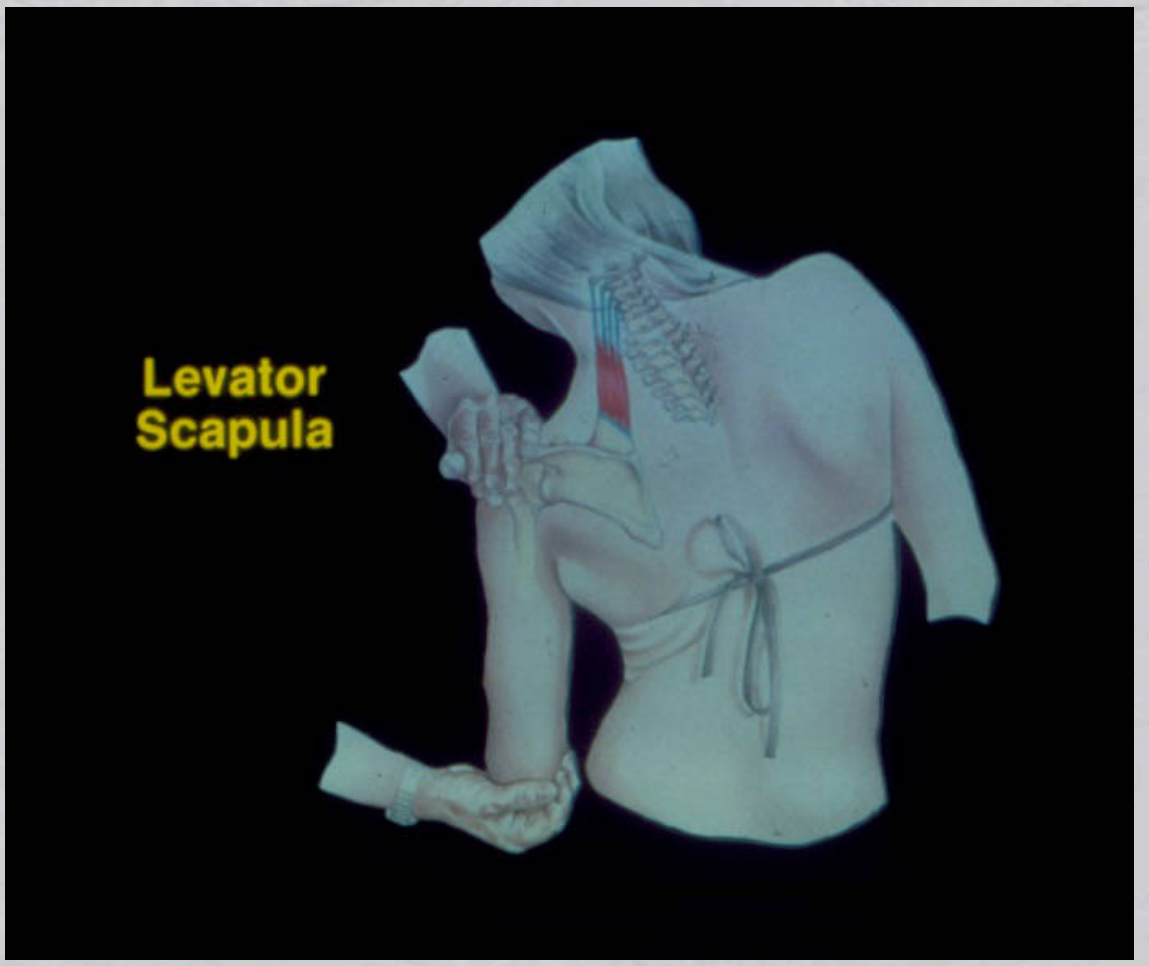
- Long thoracic n. injury - RARE



Levator Scapula






Levator
Scapula

Levator Scapula



Nerve Supply:
Dorsal Scapula,
C3, C4, C5

Common Subluxations:

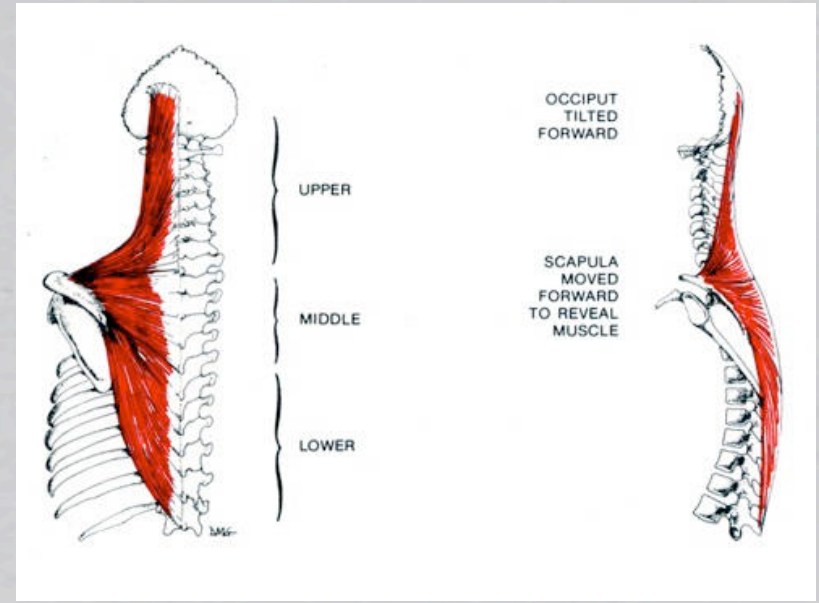
Assoc. Pt. T3, 4

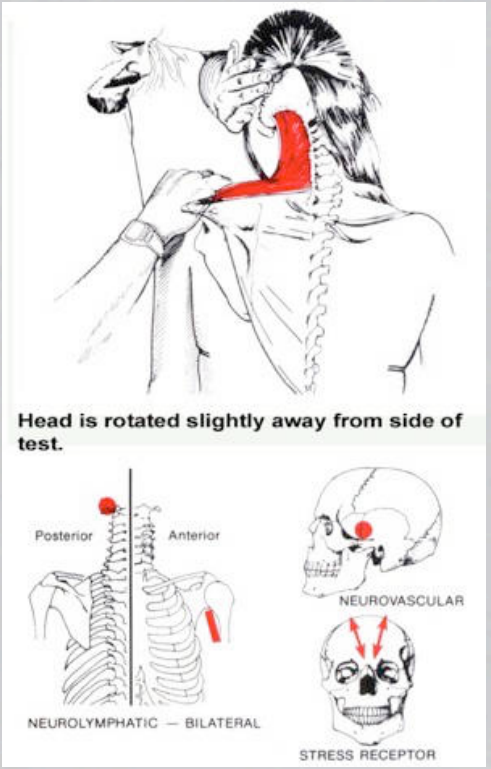
Nutrition:
Parathyroid
Substance

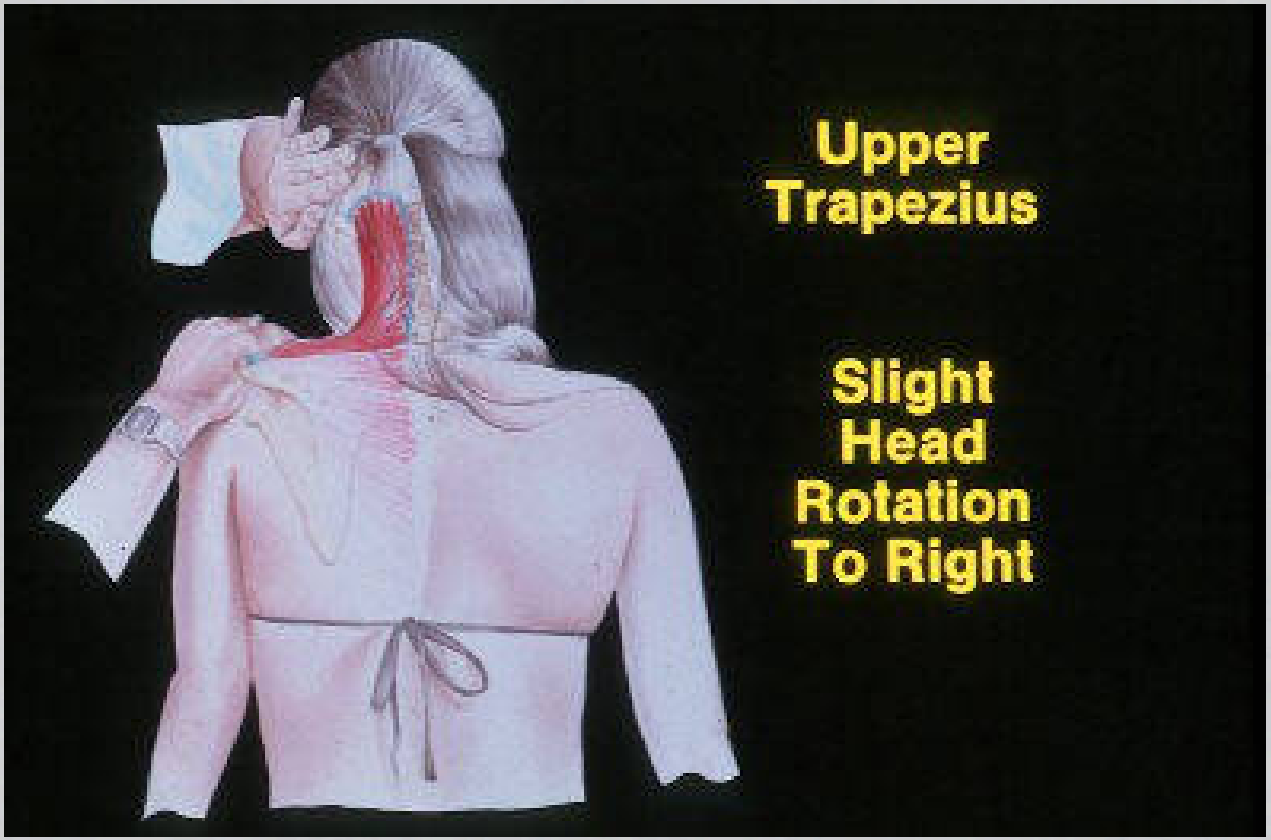
Parathyroid Glands

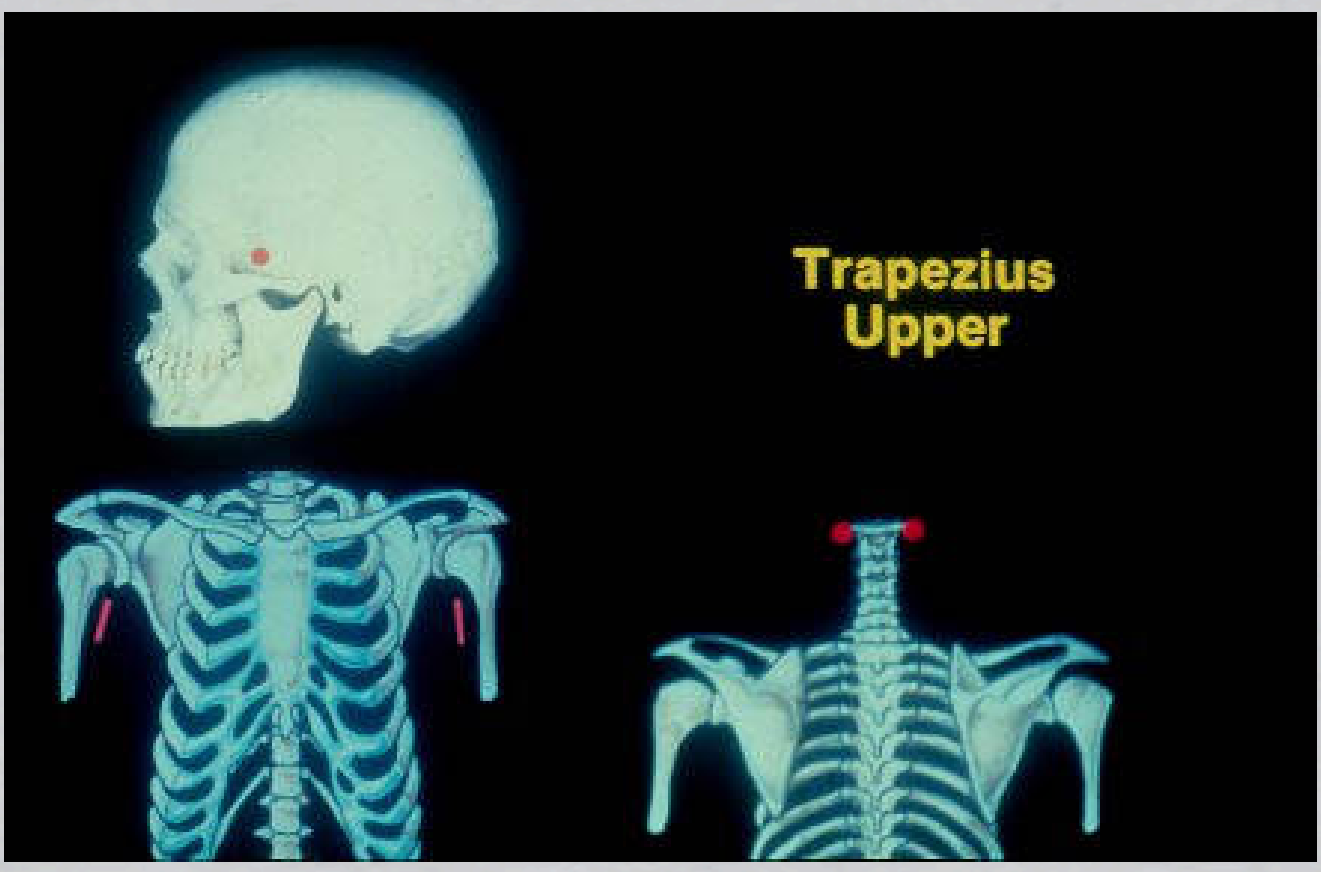
Lung Meridian

Upper Trapezius






Upper
Trapezius
Slight
Head
Rotation
To Right


Trapezius
Upper

Trapezius, Upper



Nerve Supply:
Spinal Accessory
and Ventral Ramus
of C2, C3, C4

Common Subluxations:
Cervical
Cranial Faults
Assoc. Pt. L2, 3

Nutrition:
Vitamins A, B, F,
G, and Calcium

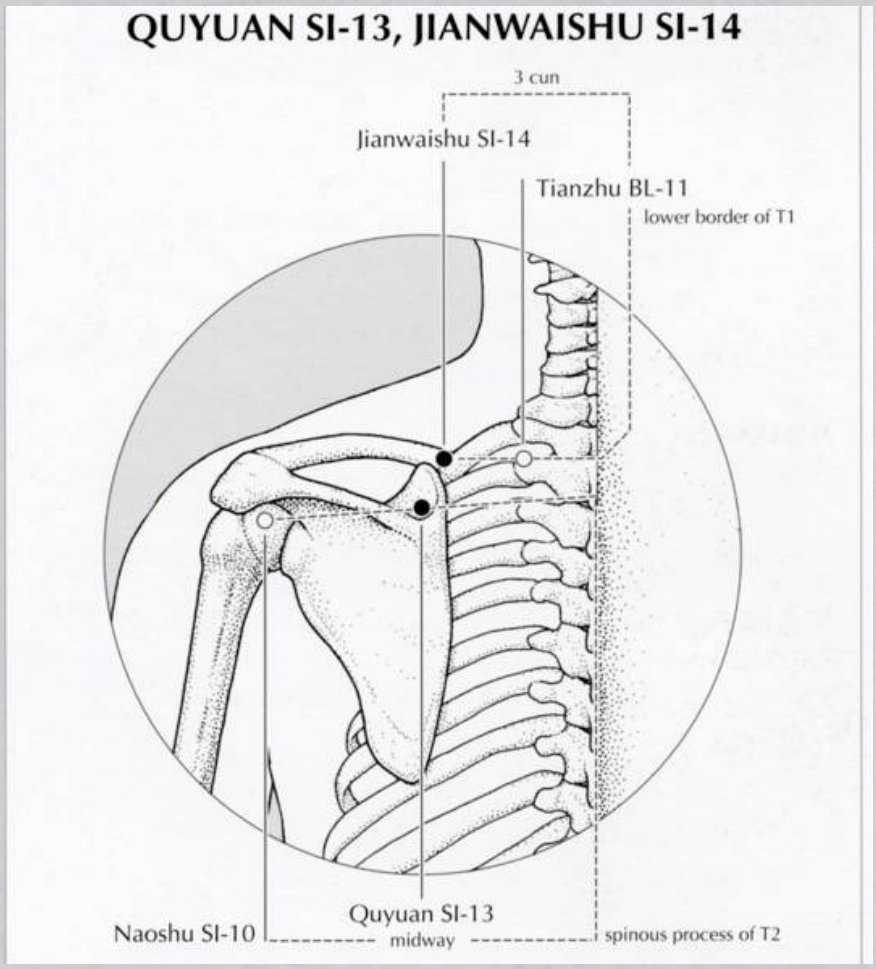
Eye and Ear

Kidney Meridian





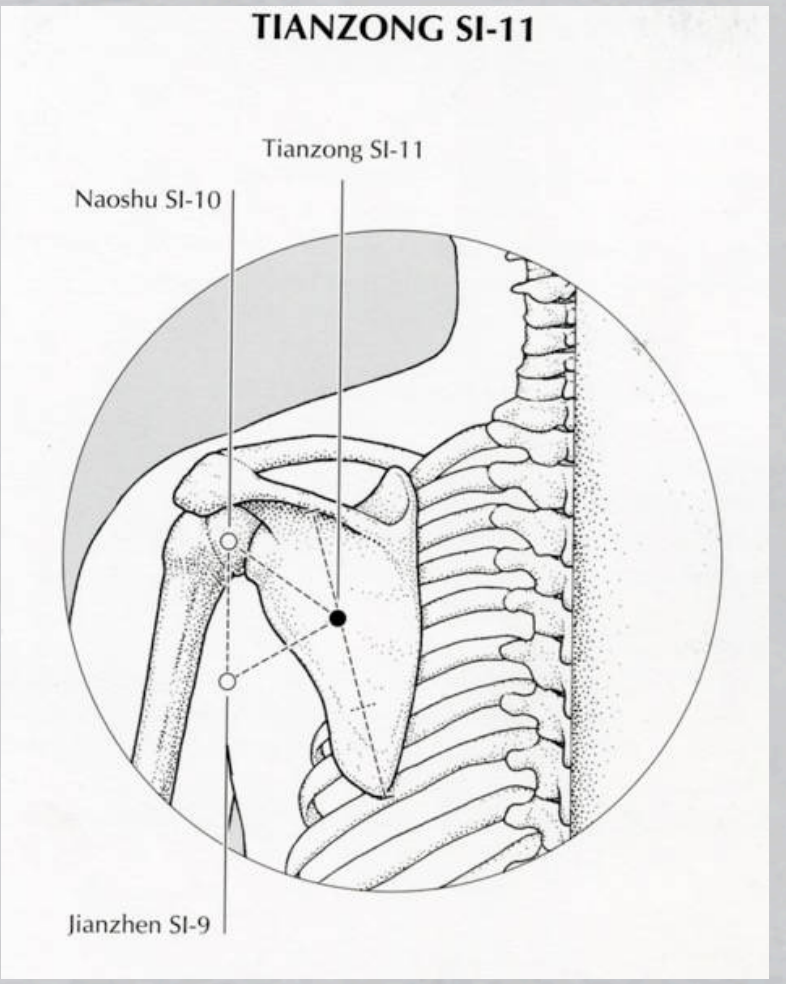
QUYUAN SI-13, JIANWAISHU SI-14



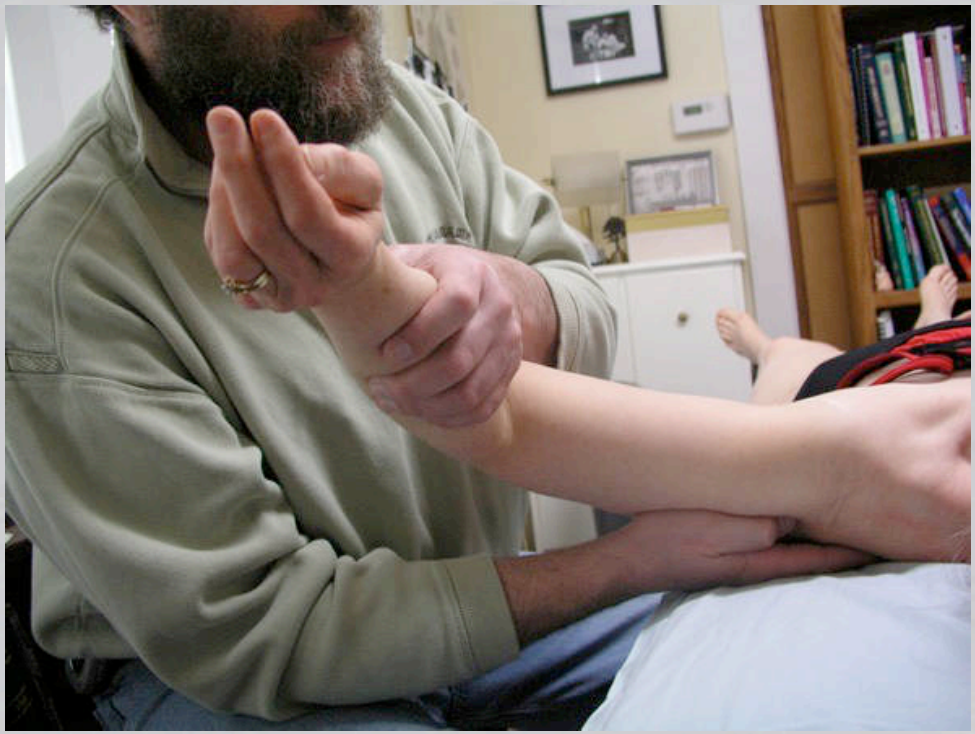


Counterstrain Tx:
Traction the arm caudad

TIANZONG SI-11



Counterstrain Tx: Infraspinatus tenderpoint





Screening Test for S-C Joint Restriction (Patient Shrugs)

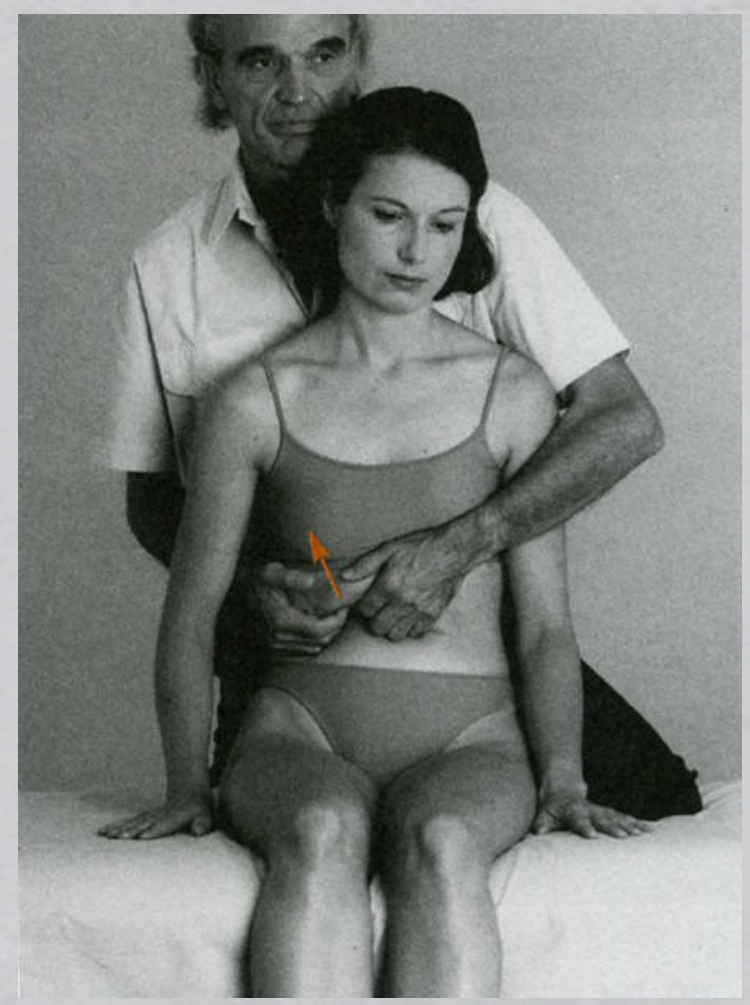


MET Tx For S-C Joint Dx: Restriction of Inferior Glide



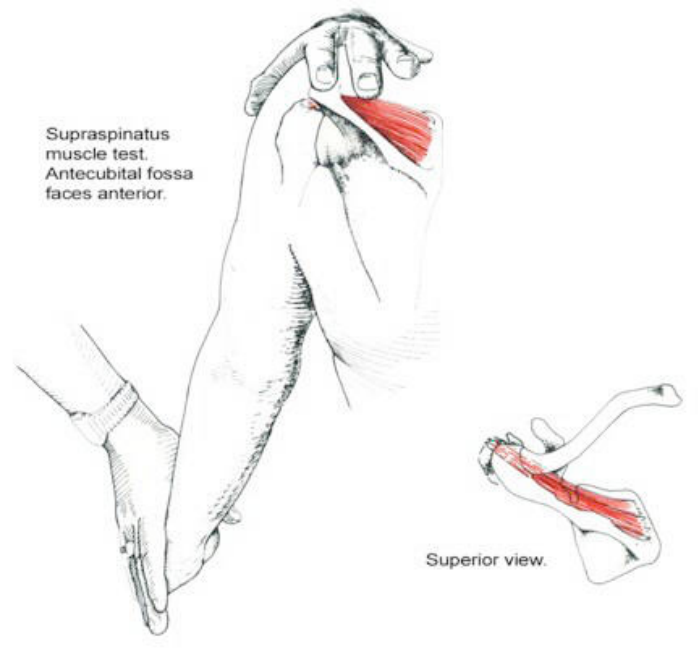
MET Tx for Restricted Posterior Glide of Proximal Clavicle

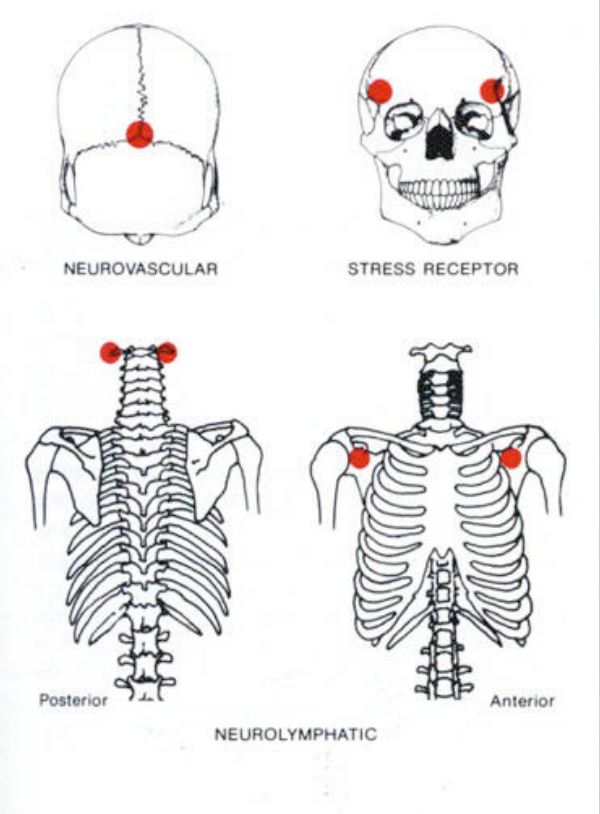
Visceral Manipulation for Liver Mobility (seated)



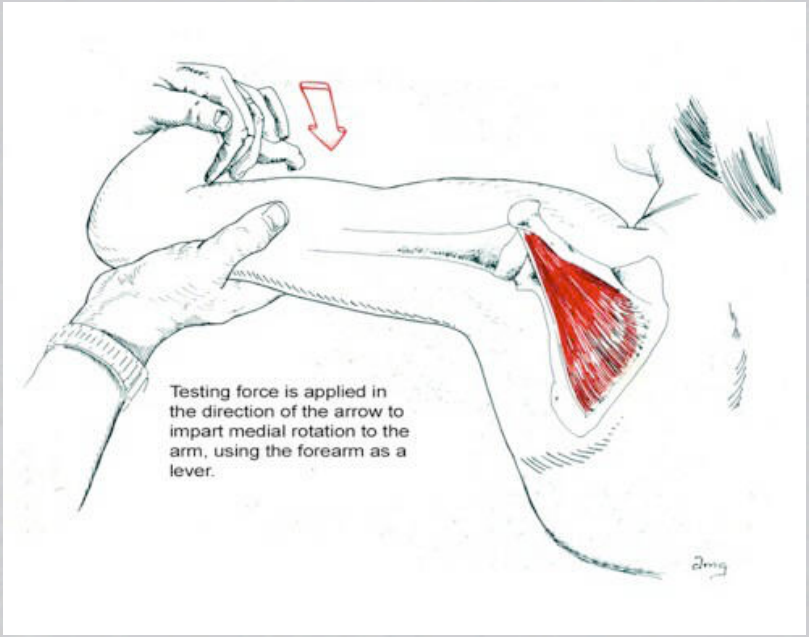
Reproduced with permission from
Visceral Manipulation
Revised Edition, Eastland Press

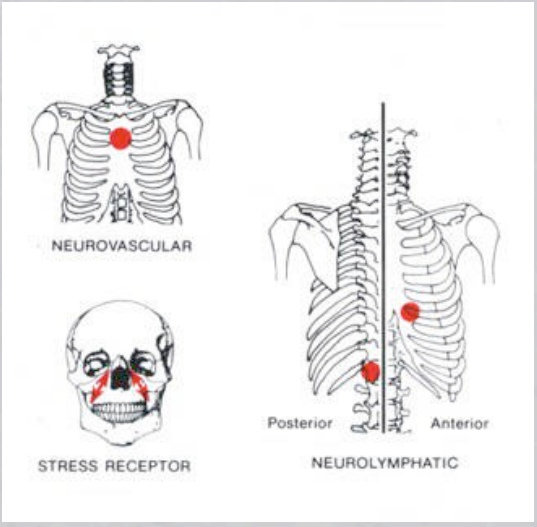
Supraspinatus



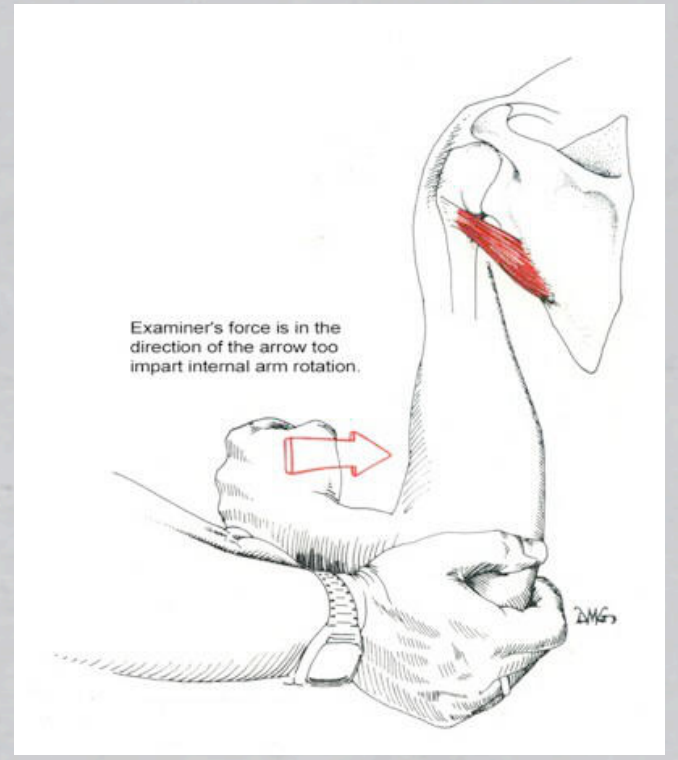


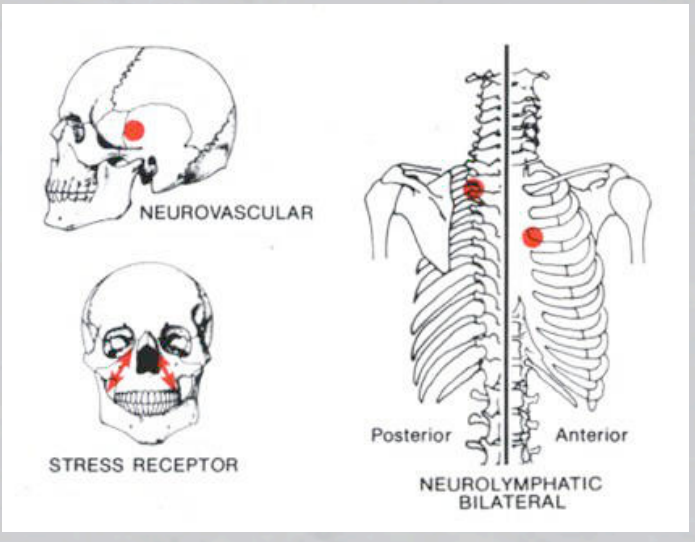
Infraspinatus



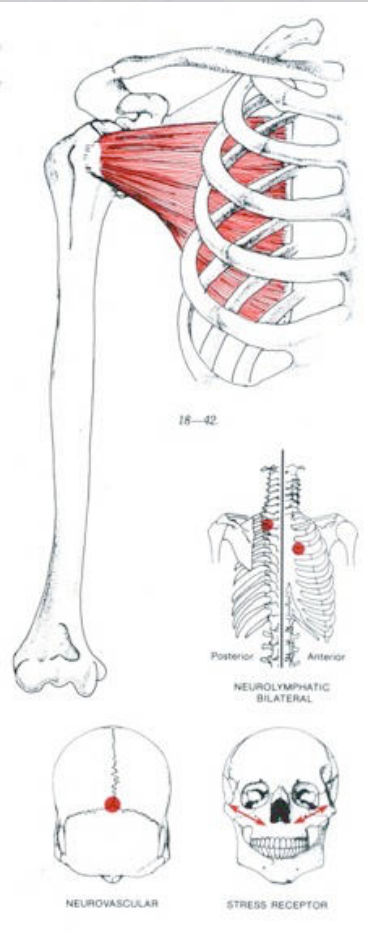


Teres Minor

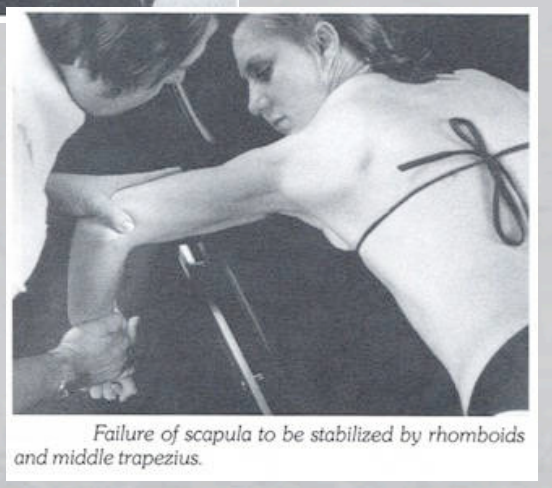

Examiner's force is in the direction of the arrow too impart internal arm rotation.


NEUROVASCULAR
STRESS RECEPTOR
Posterior
Anterior
NEUROLYMPHATIC
BILATERAL

Subscapularis

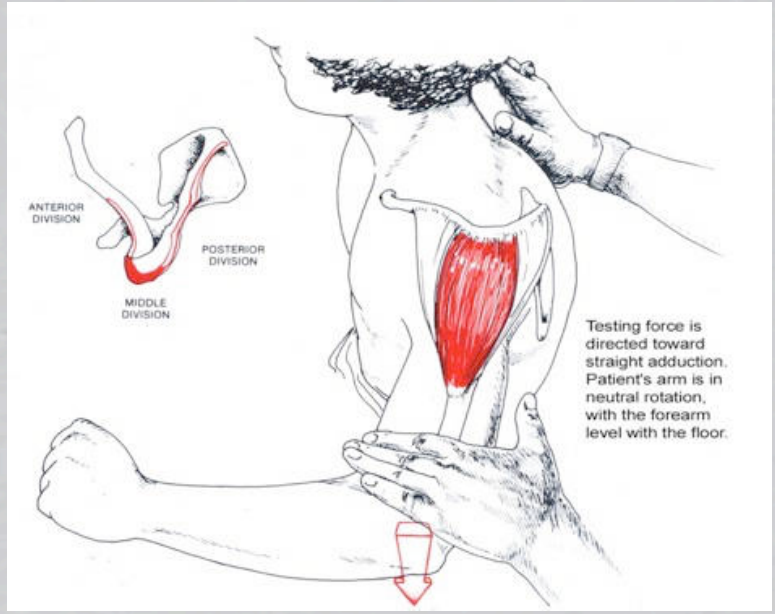


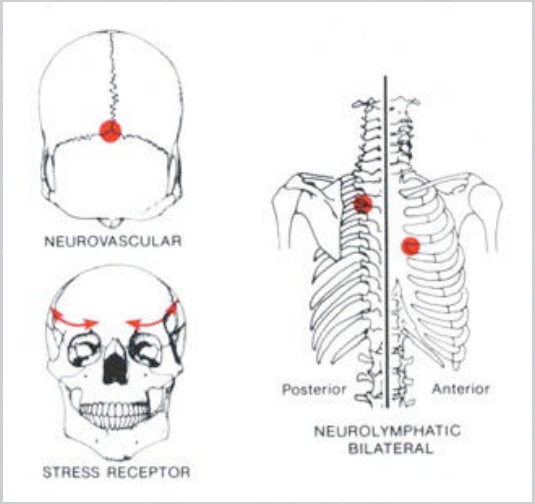




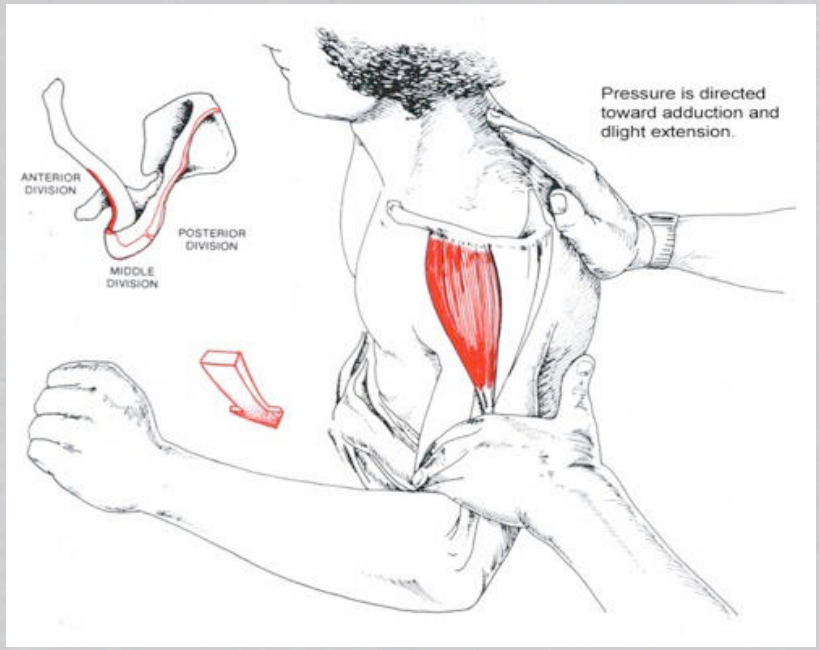
Failure of scapula to be stabilized by rhomboids and middle trapezius.

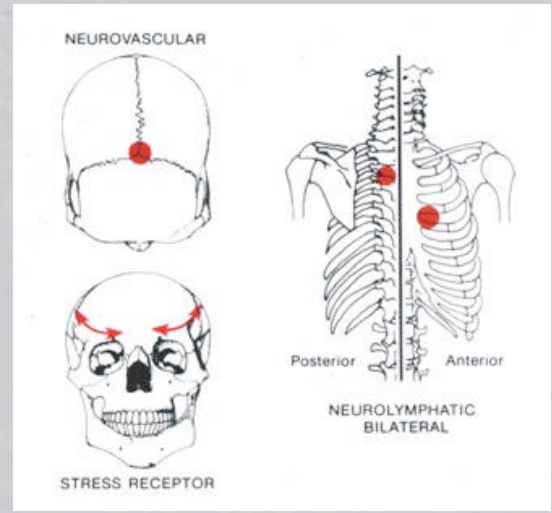
Deltoid - Middle



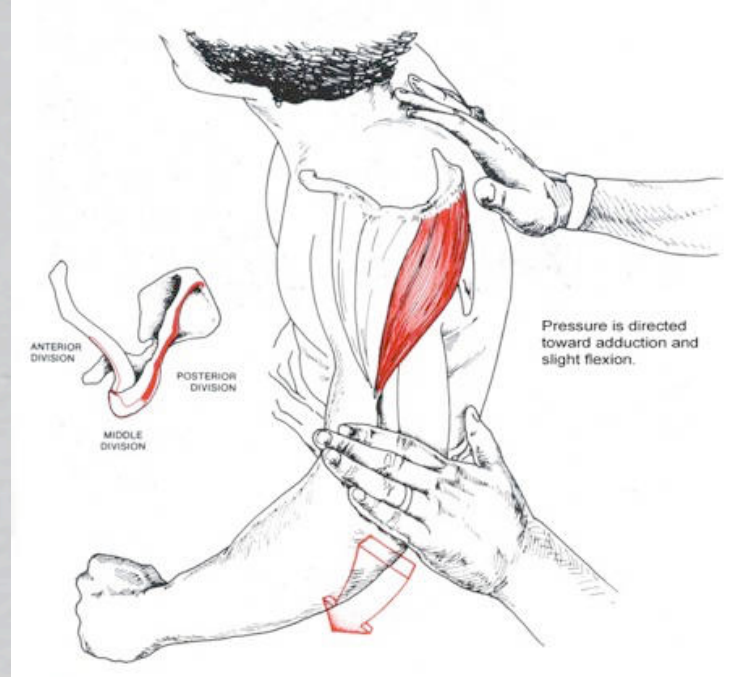


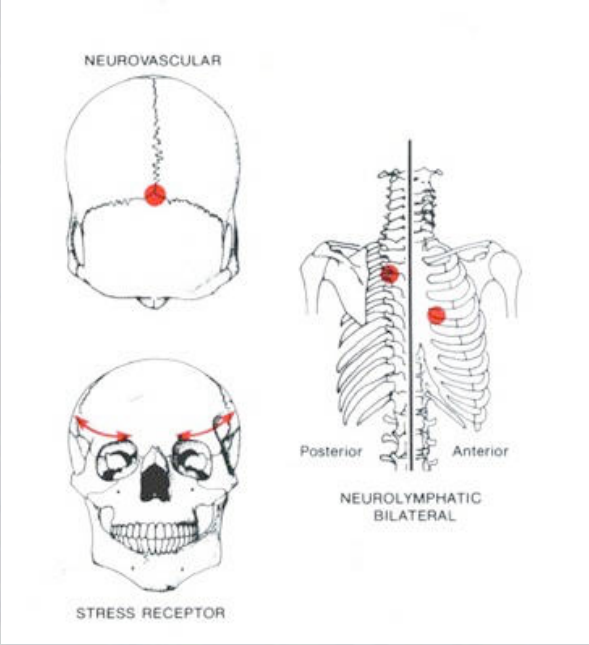
Deltoid - Anterior



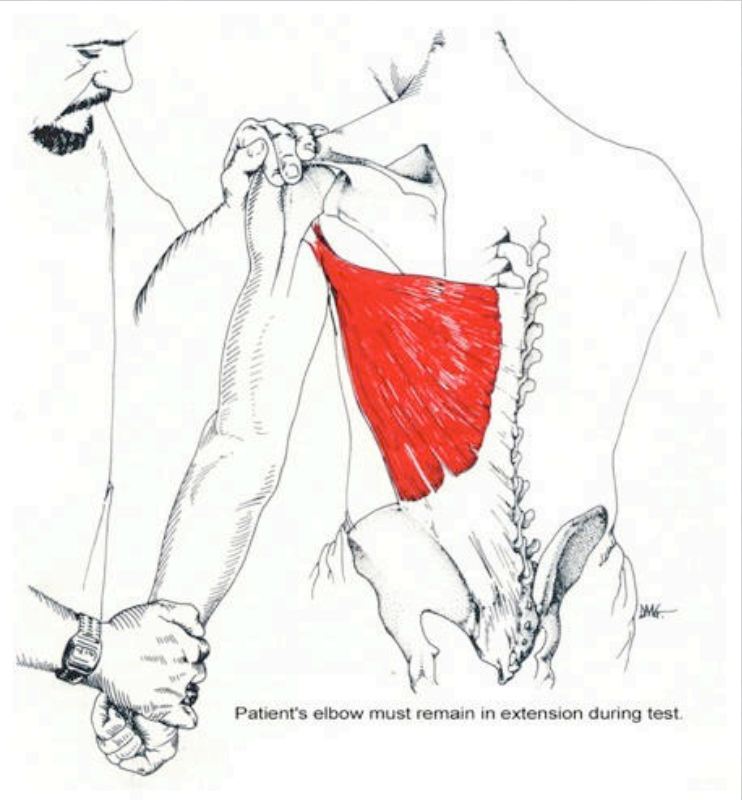


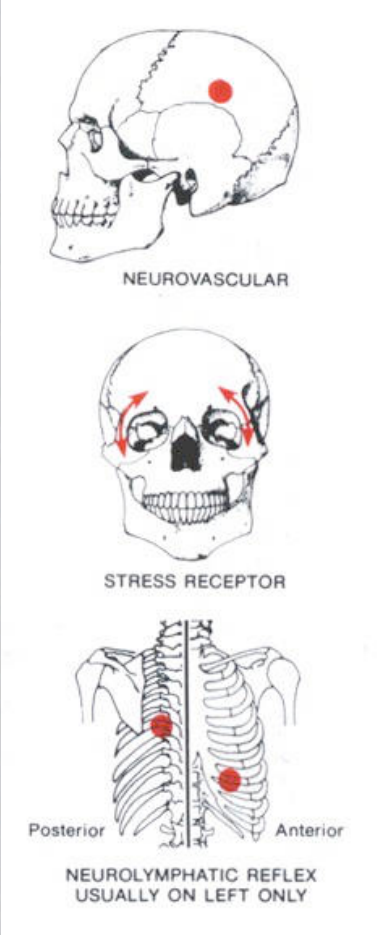
Deltoid - Posterior



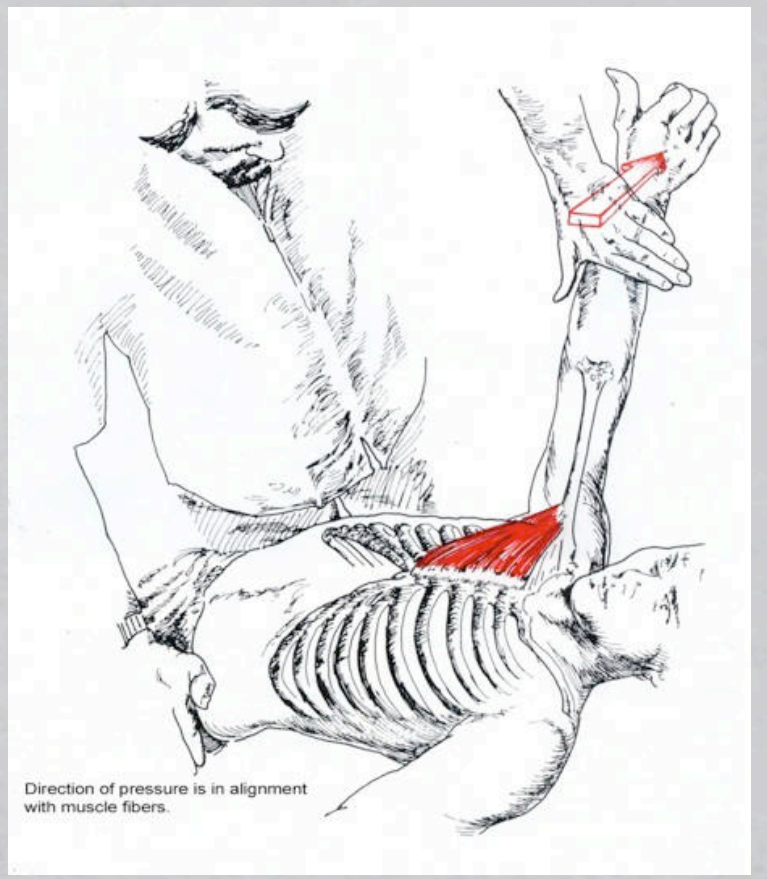


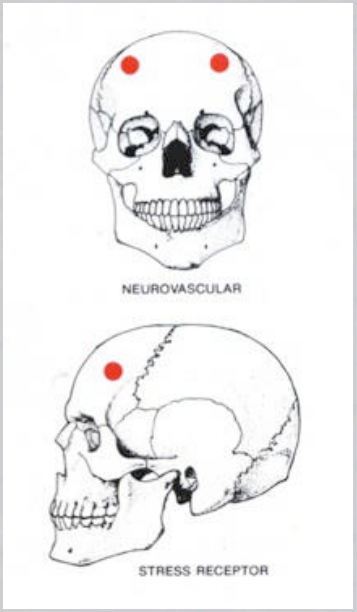
Latisimus Dorsi

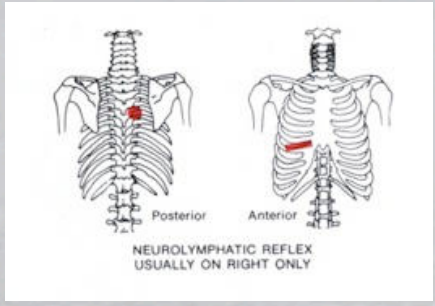




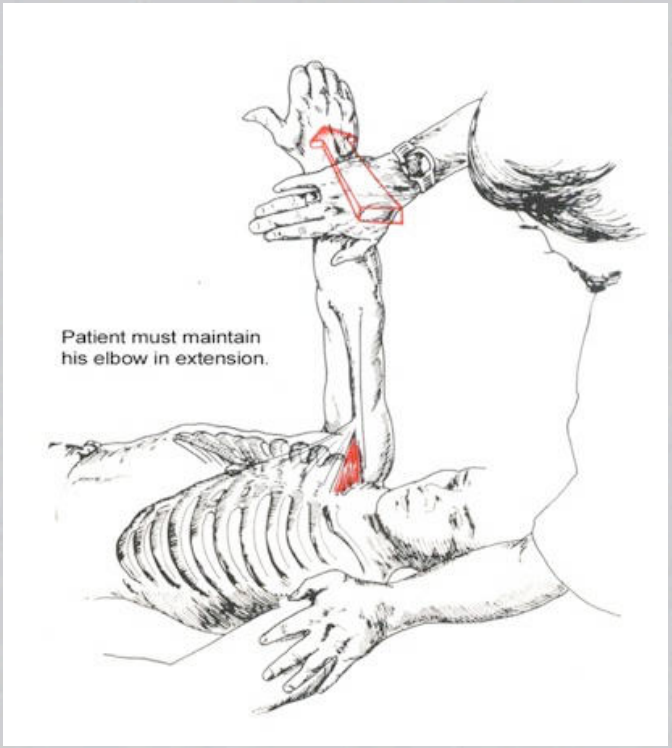
Pectoralis Major - Sternal

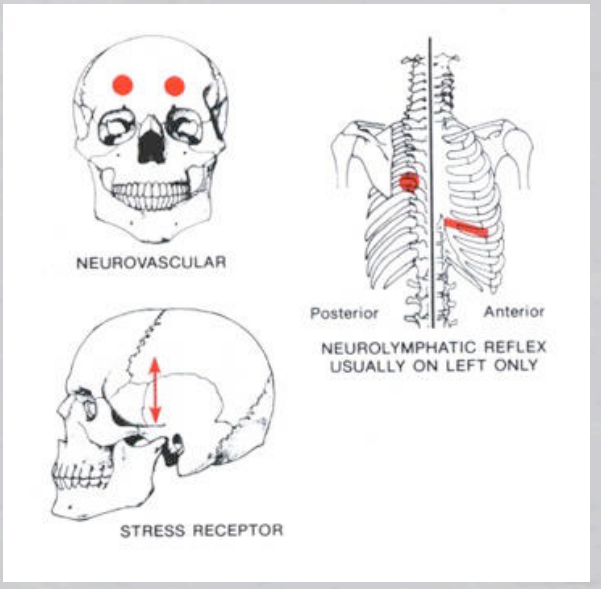




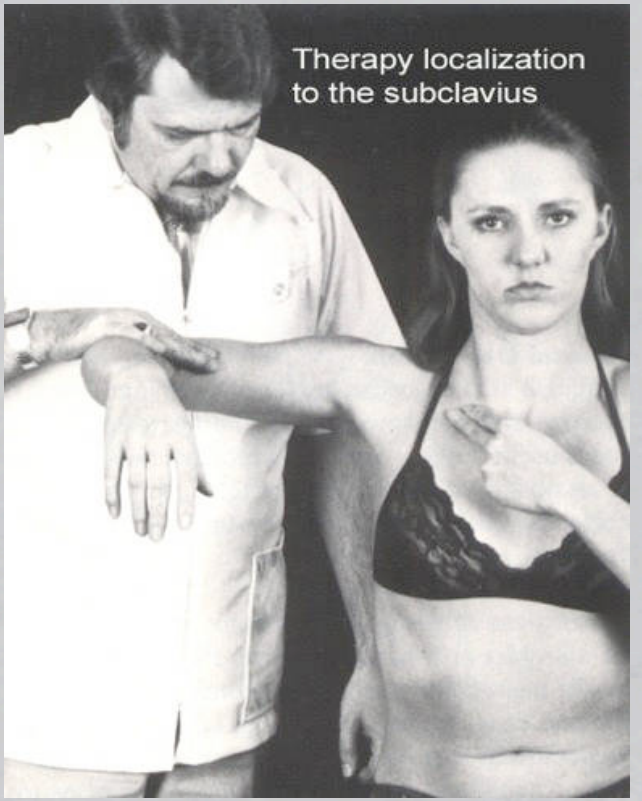


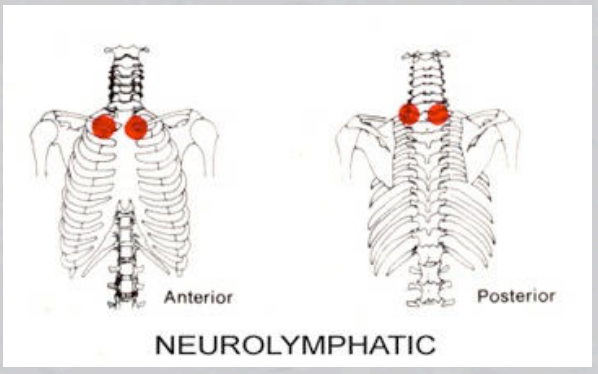
Pectoralis Major - Clavicular



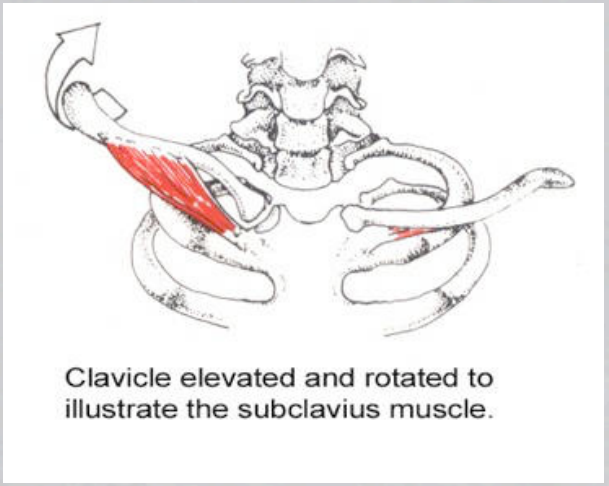


Subclavius



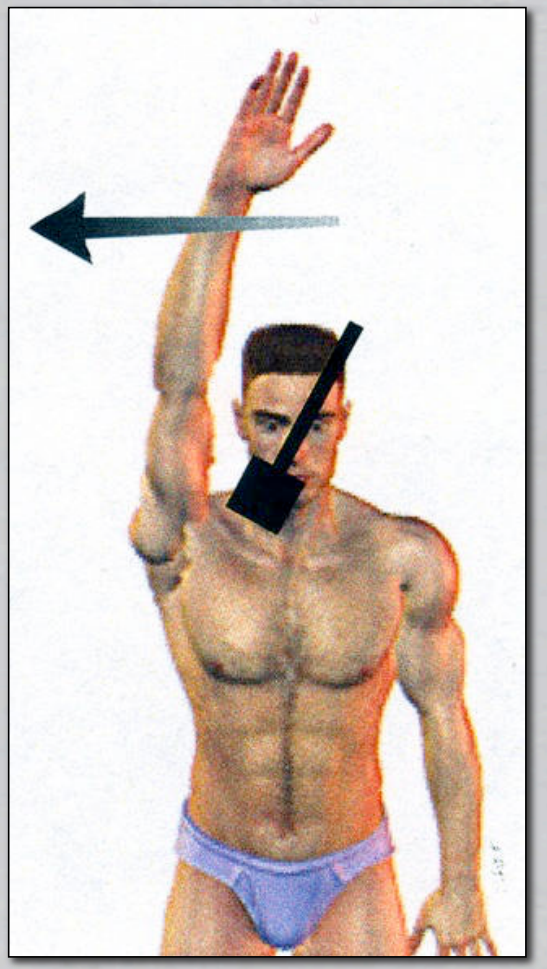


NEUROLYMPHATIC

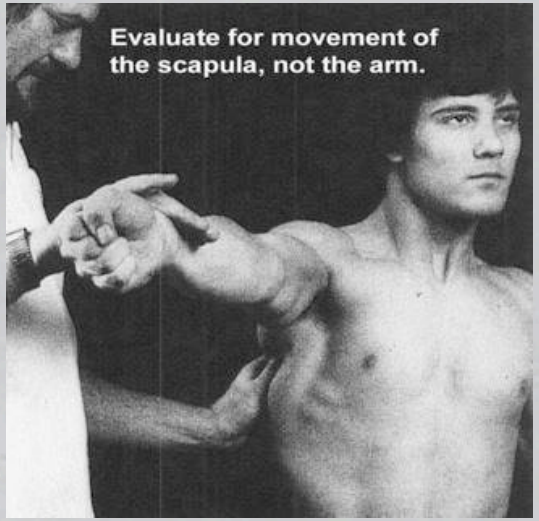


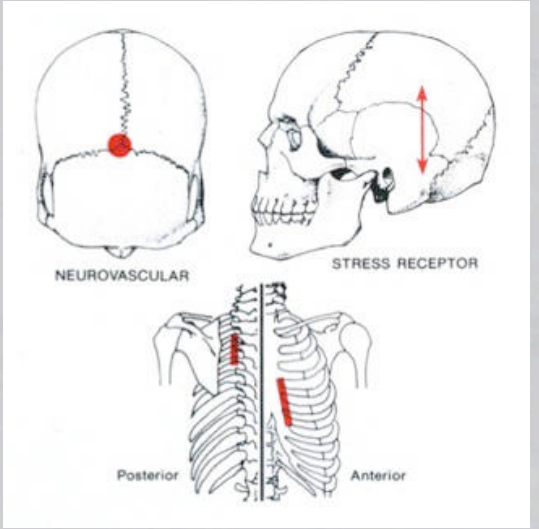
Clavicle elevated and rotated to illustrate the subclavius muscle.

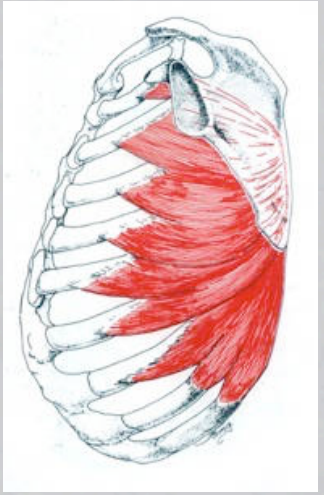
Subclavius



Serratus Anticus

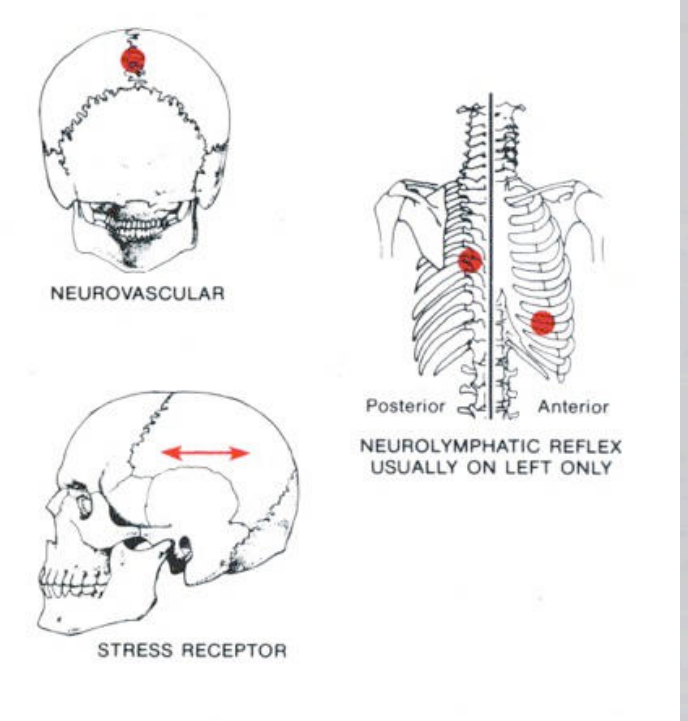




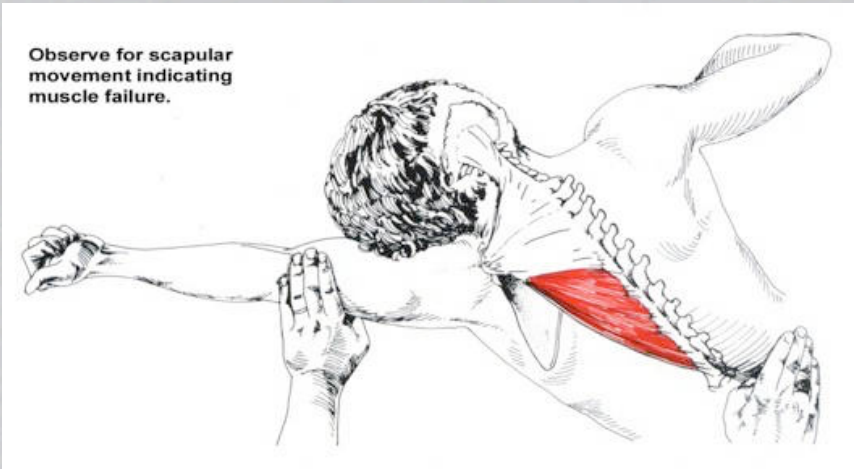


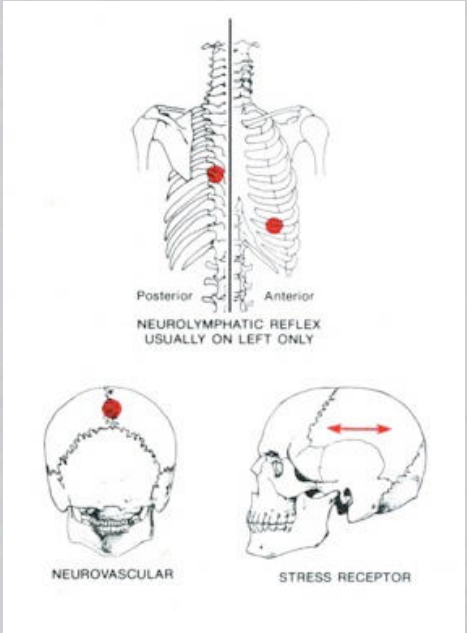
Middle Trapezius



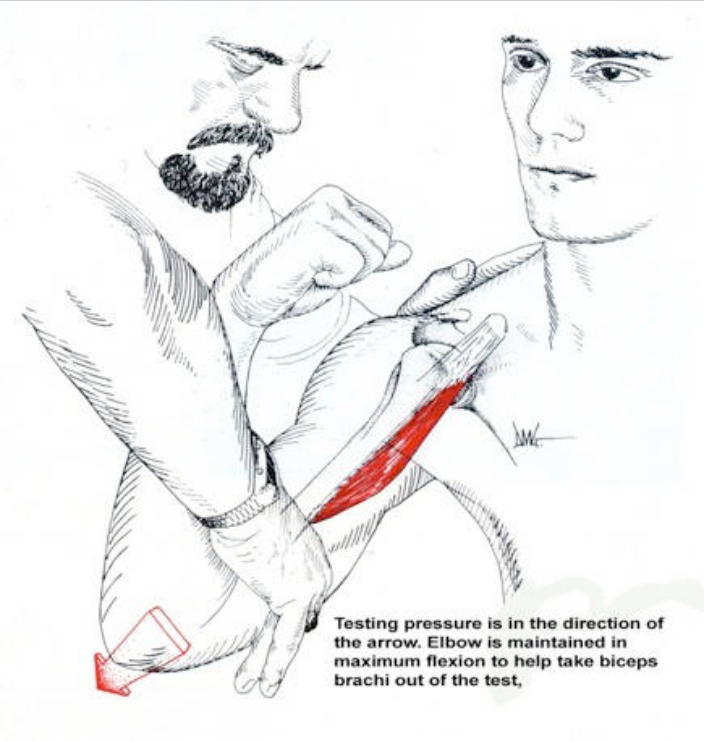


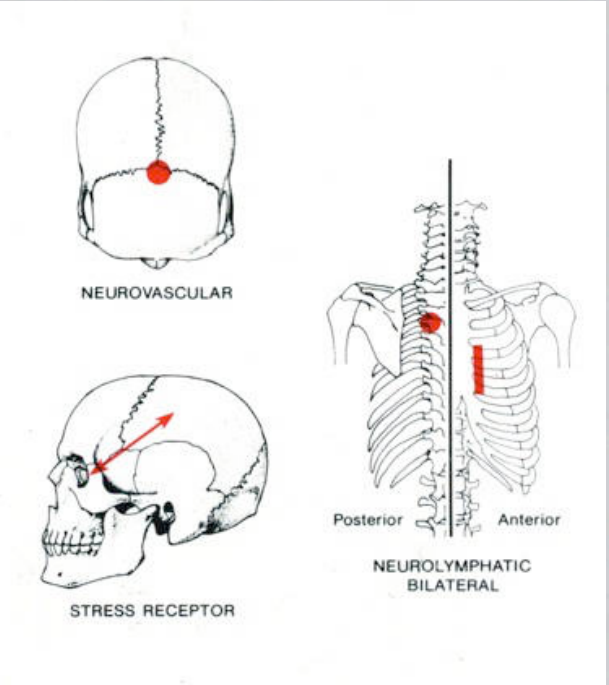
Lower Trapezius



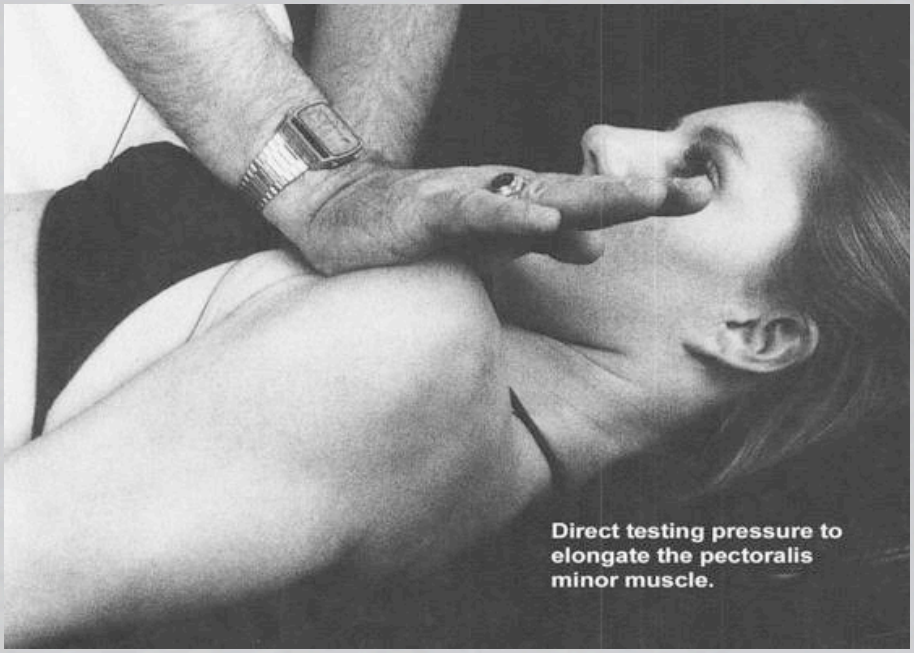


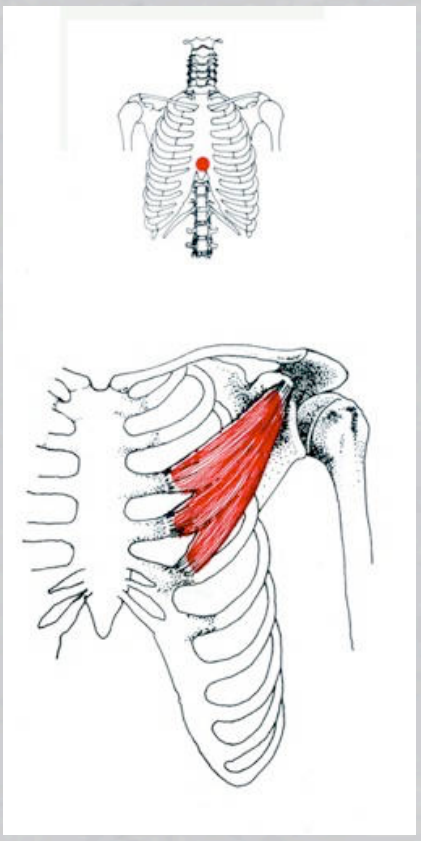
Coracobrachialis



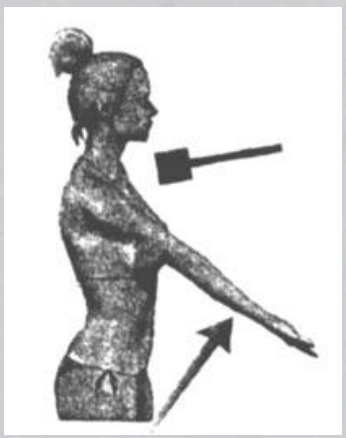


Pectoralis Minor





Test position of body part
The arm is adducted with the elbow extended.
The arm is placed directly over the fibers
of the pectoralis minor (towards the opposite
anterior superior iliac spine).
The arm is then externally rotated.



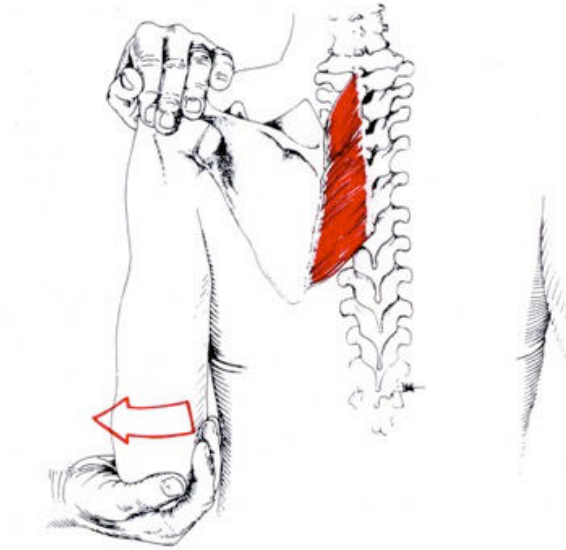
Stabilization
The hand is placed over the shoulder being tested.
Contact scapula - feel the motion.

Testing hand position
Contact is made under the elbow being tested.

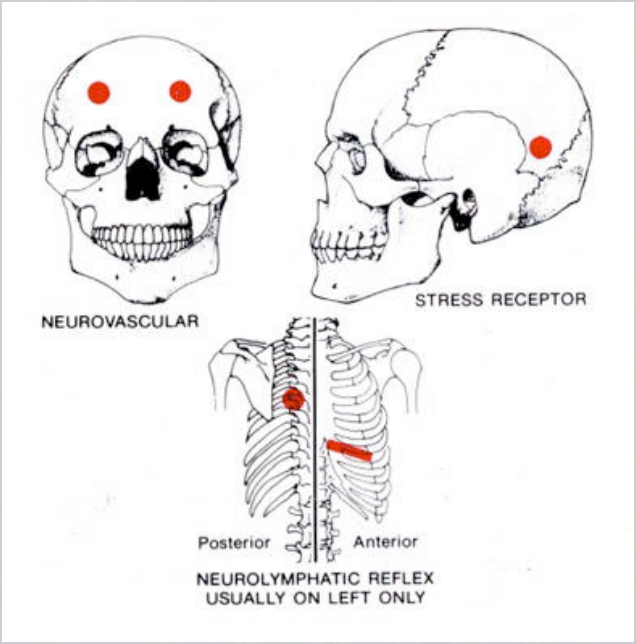


Vector of force
Pressure is directed elevate (abduct) the
arm up off of the body.

Rhomboid

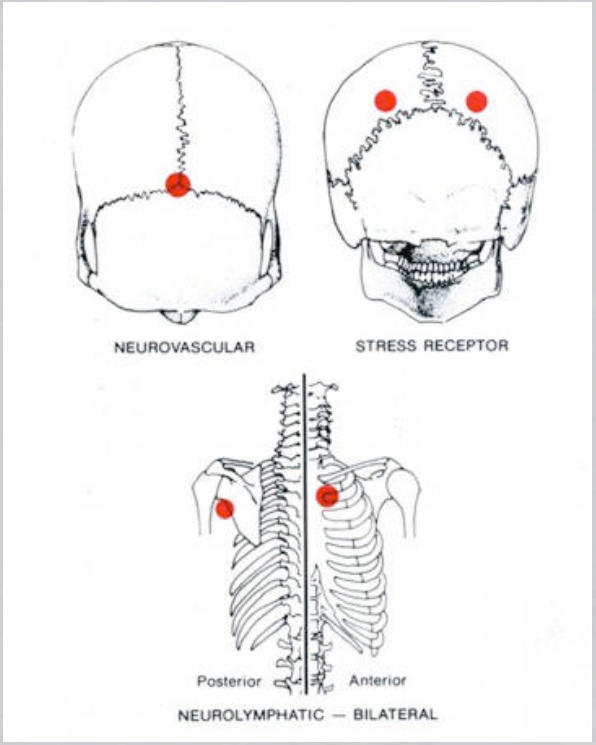


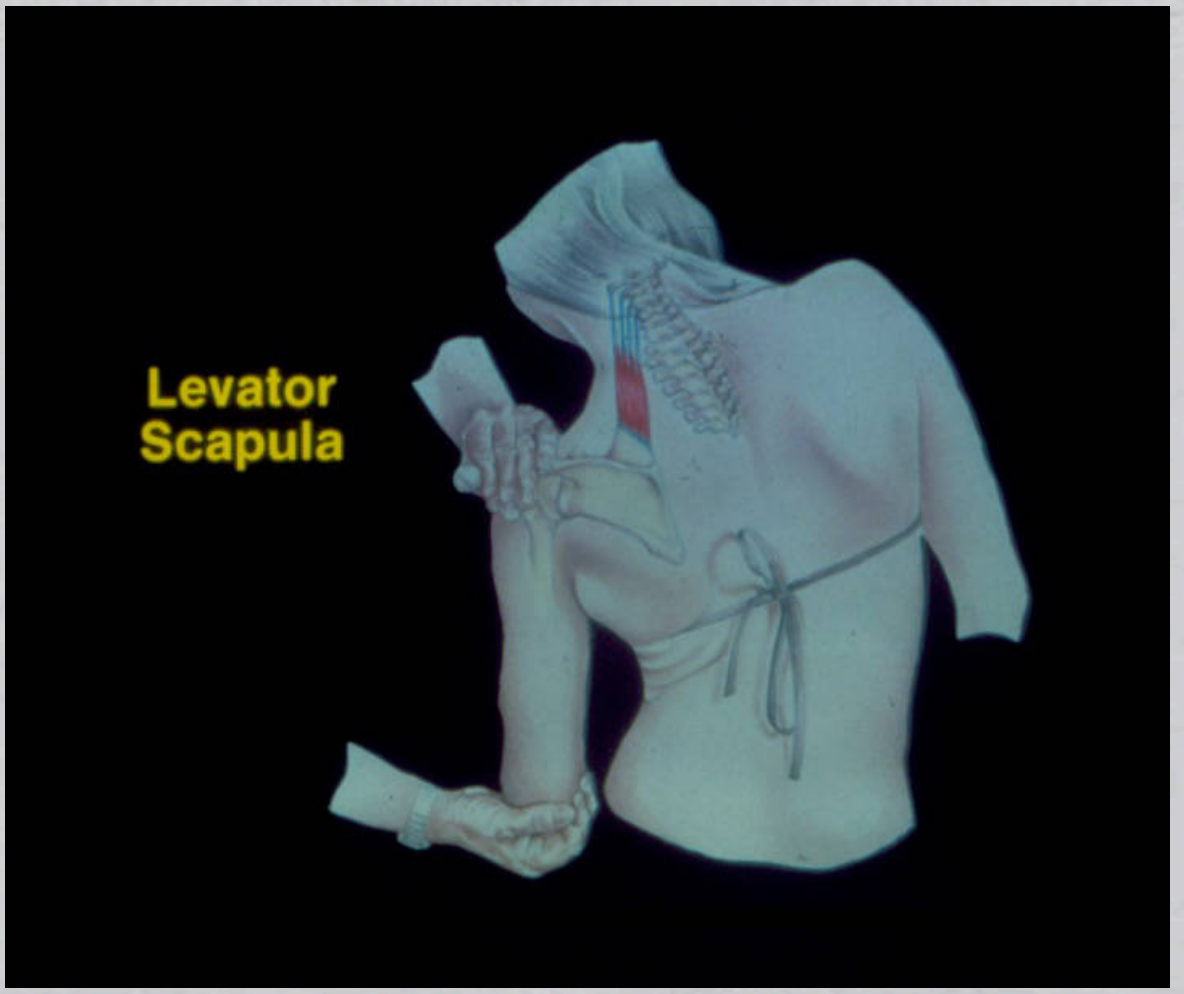
Rhomboid muscle test. Examiner must observe for scapular movement away from spine in the direction of the arrow.



Levator Scapula






Levator
Scapula

Levator Scapula



Nerve Supply:
Dorsal Scapula,
C3, C4, C5

Common Subluxations:

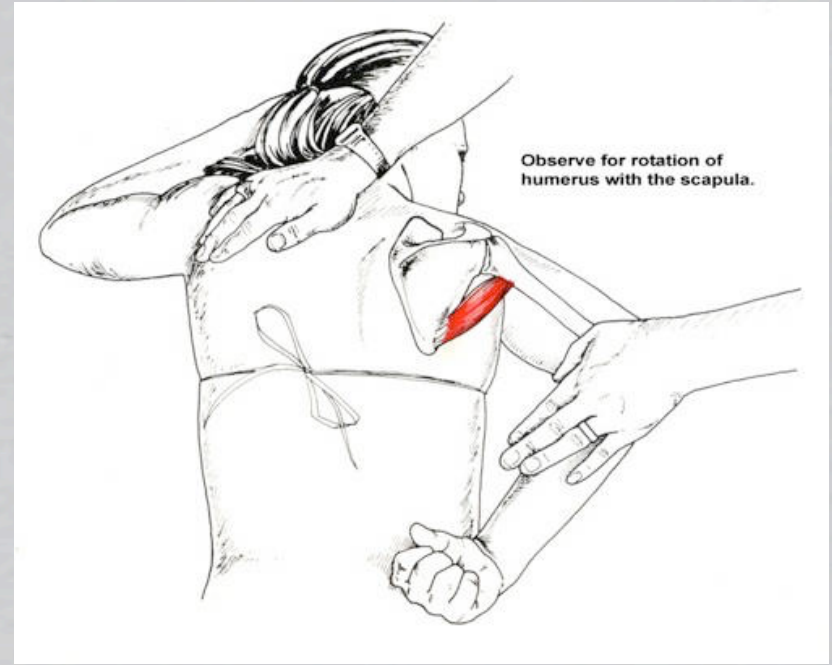
Assoc. Pt. T3, 4

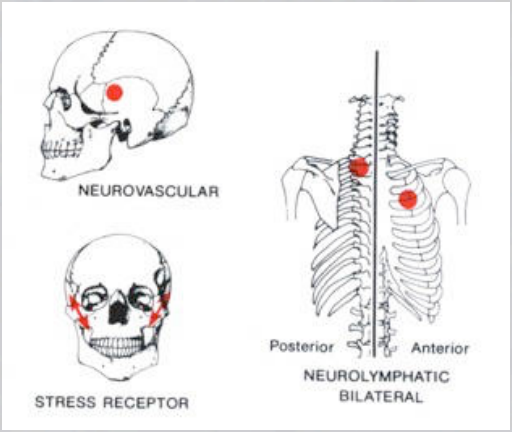
Nutrition:
Parathyroid
Substance

Parathyroid Glands

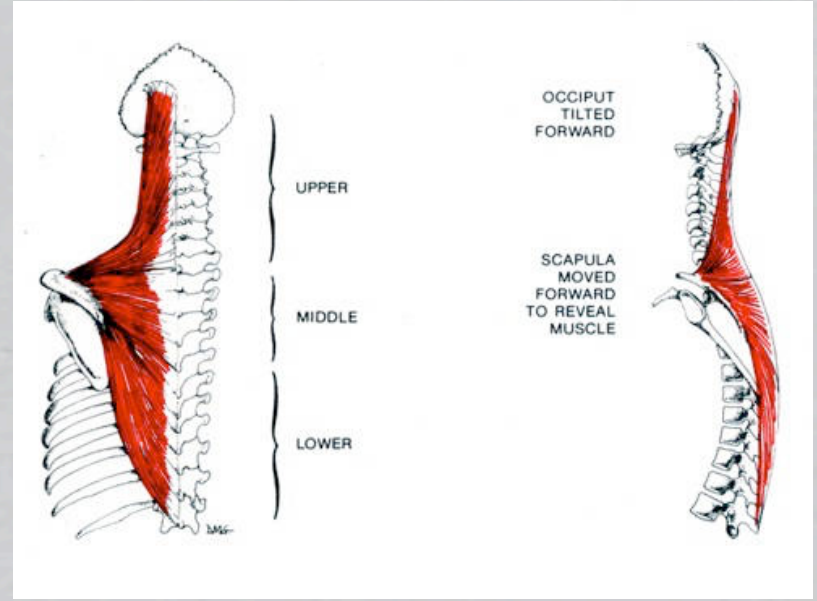
Lung Meridian

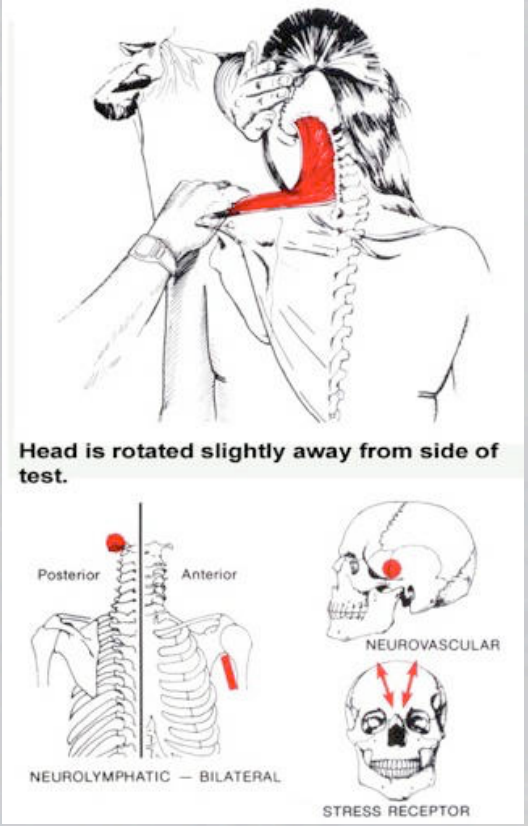
Teres Major

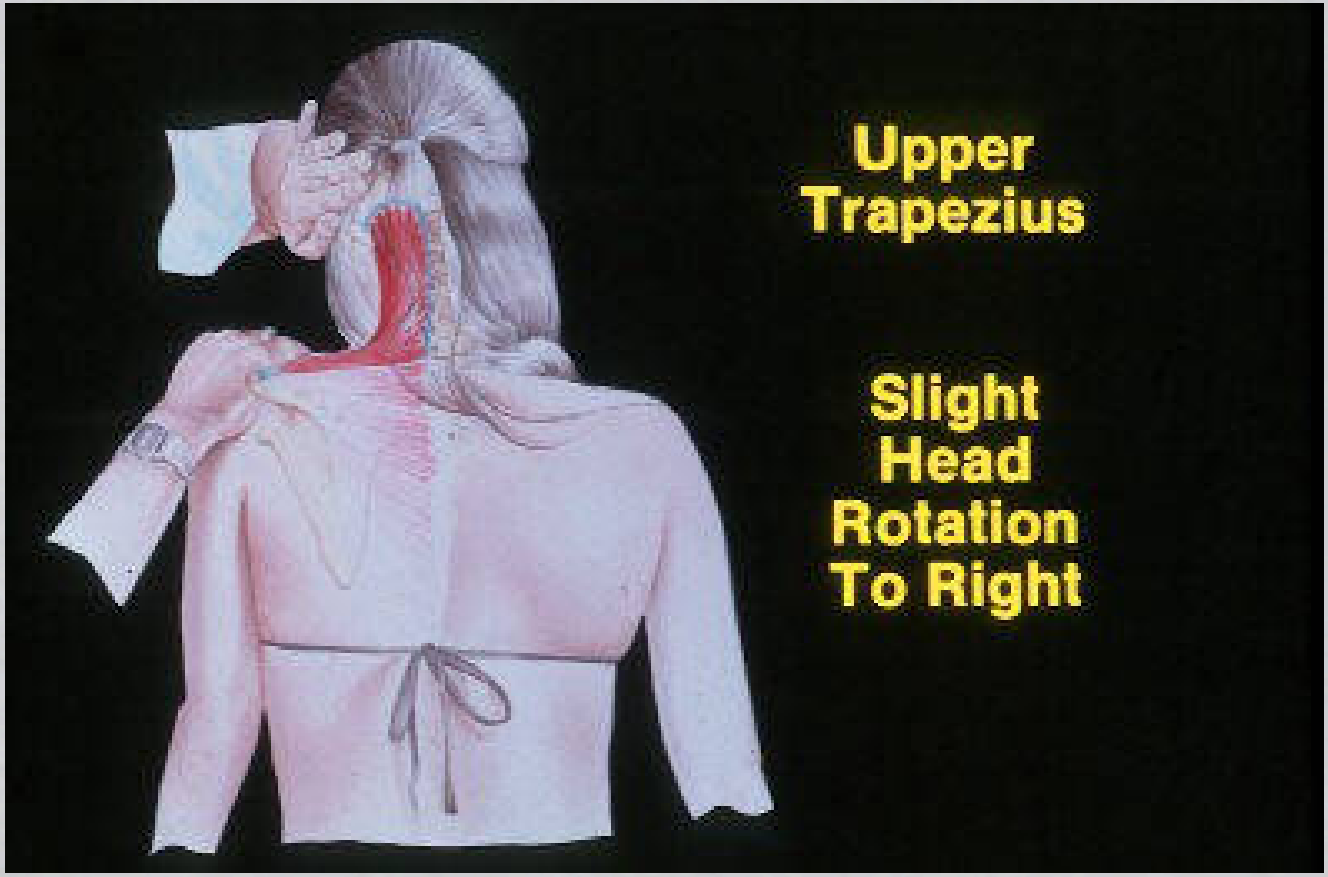

Observe for rotation of
humerus with the scapula.

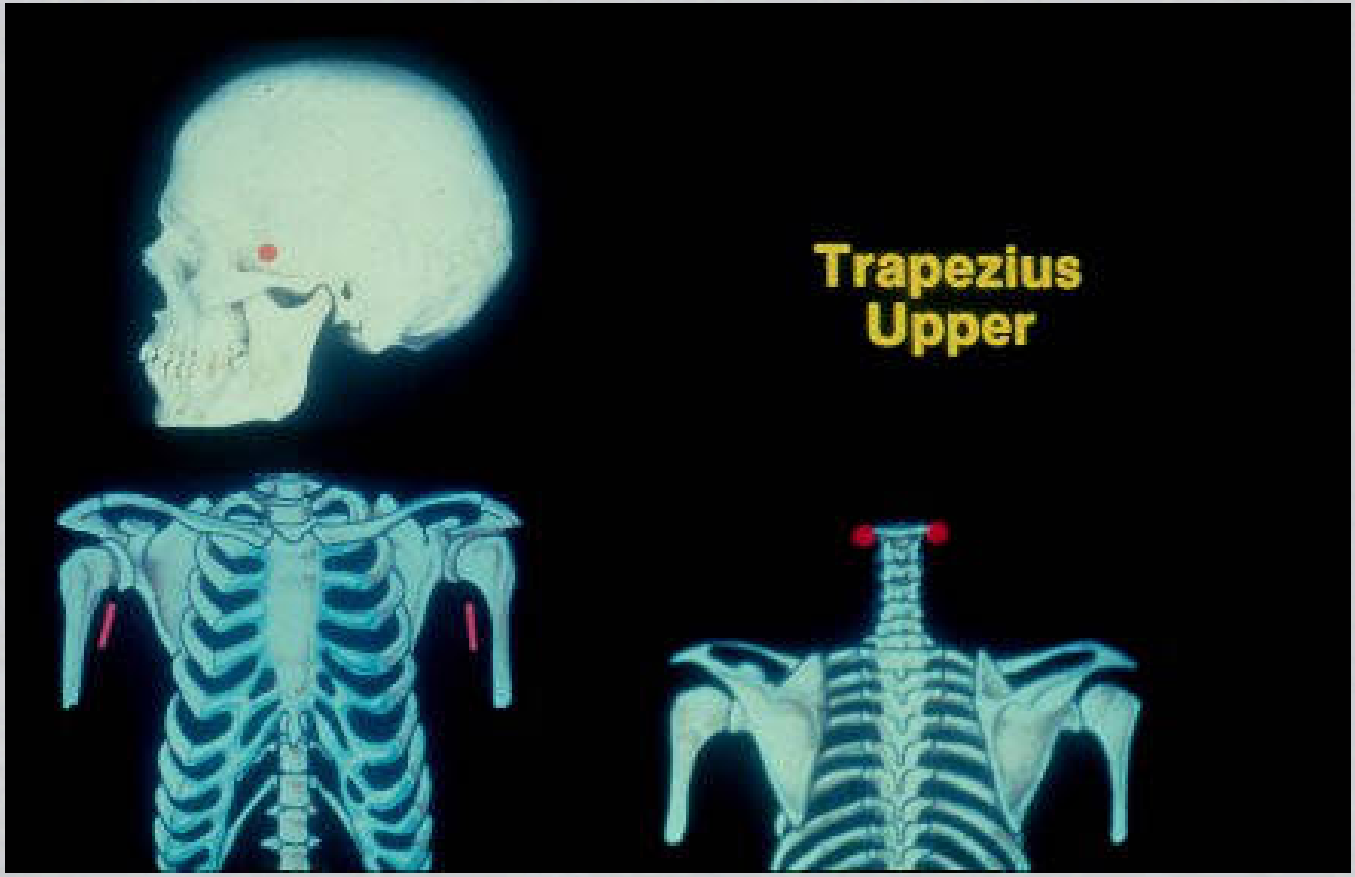

NEUROVASCULAR
STRESS RECEPTOR
Posterior
Anterior
NEUROLYMPHATIC
BILATERAL

Upper Trapezius






Upper
Trapezius
Slight
Head
Rotation
To Right


Trapezius
Upper

Trapezius, Upper



Eye and Ear

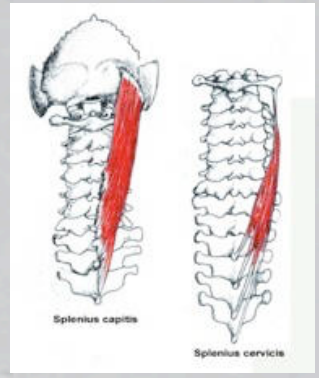
Kidney Meridian

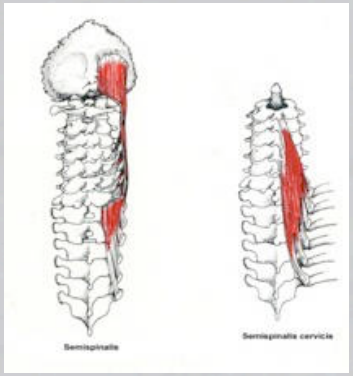
Nerve Supply:
Spinal Accessory
and Ventral Ramus
of C2, C3, C4

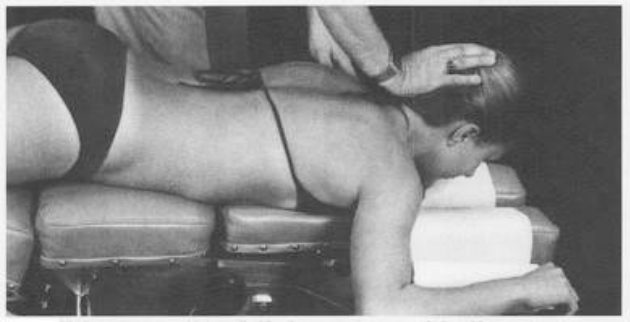
Common Subluxations:
Cervical
Cranial Faults
Assoc. Pt. L2, 3

Nutrition:
Vitamins A, B, F,
G, and Calcium

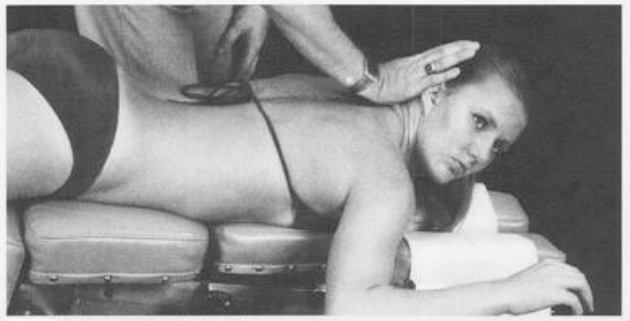
Neck Extensors



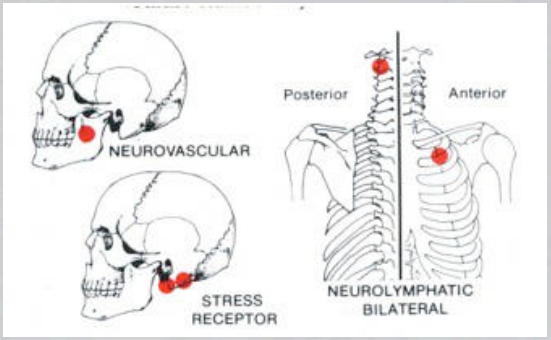




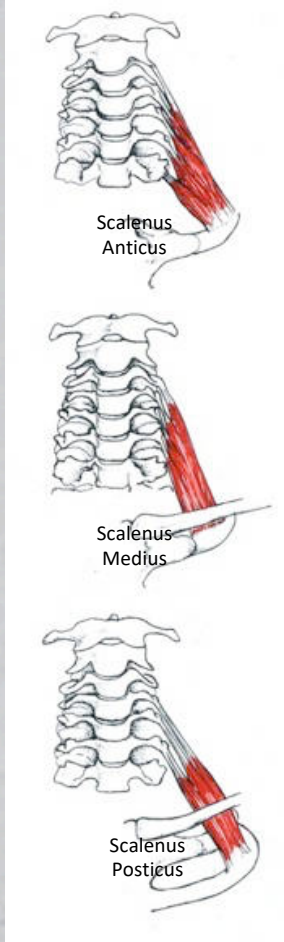
Neck extensors tested bilaterally. Hands are not in contact with the table.

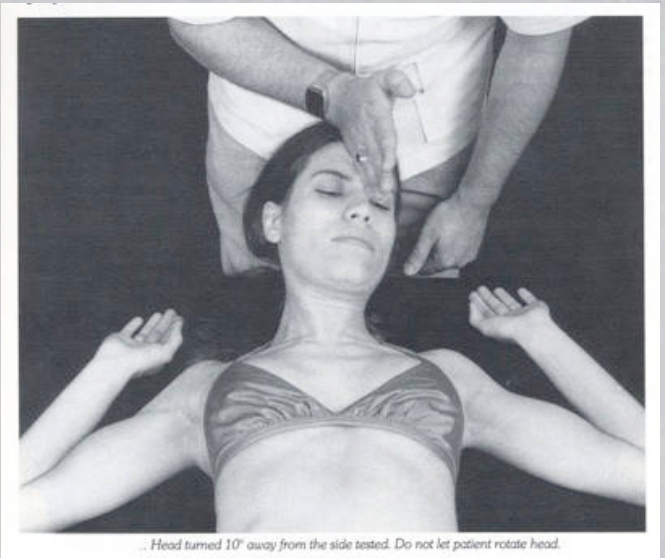


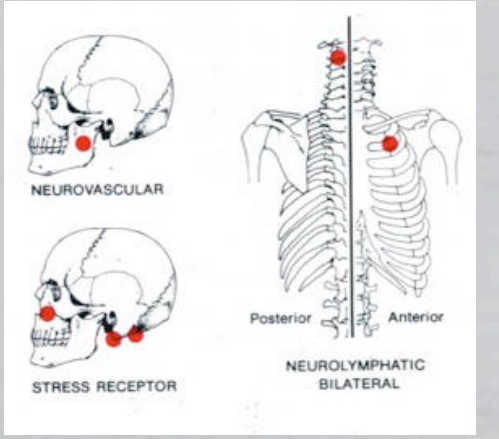
Neck extensors tested unilaterally.



Scalenes

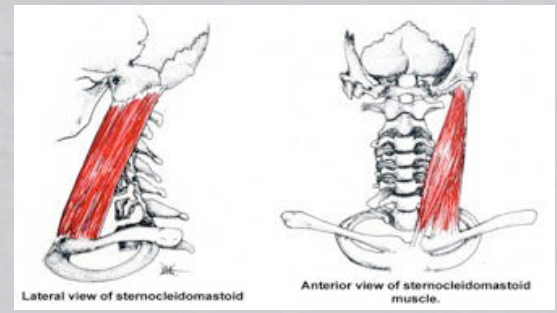


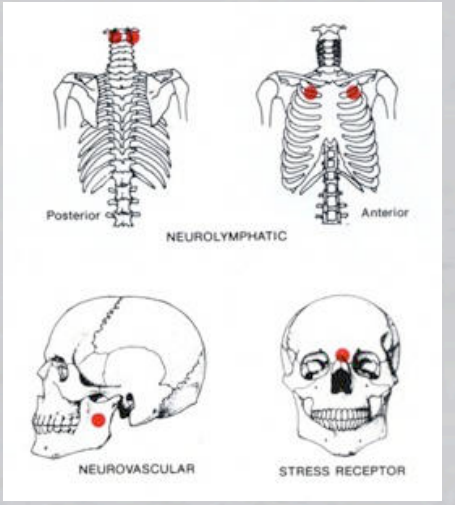

Head turned 10° away from the side tested. Do not let patient rotate head.



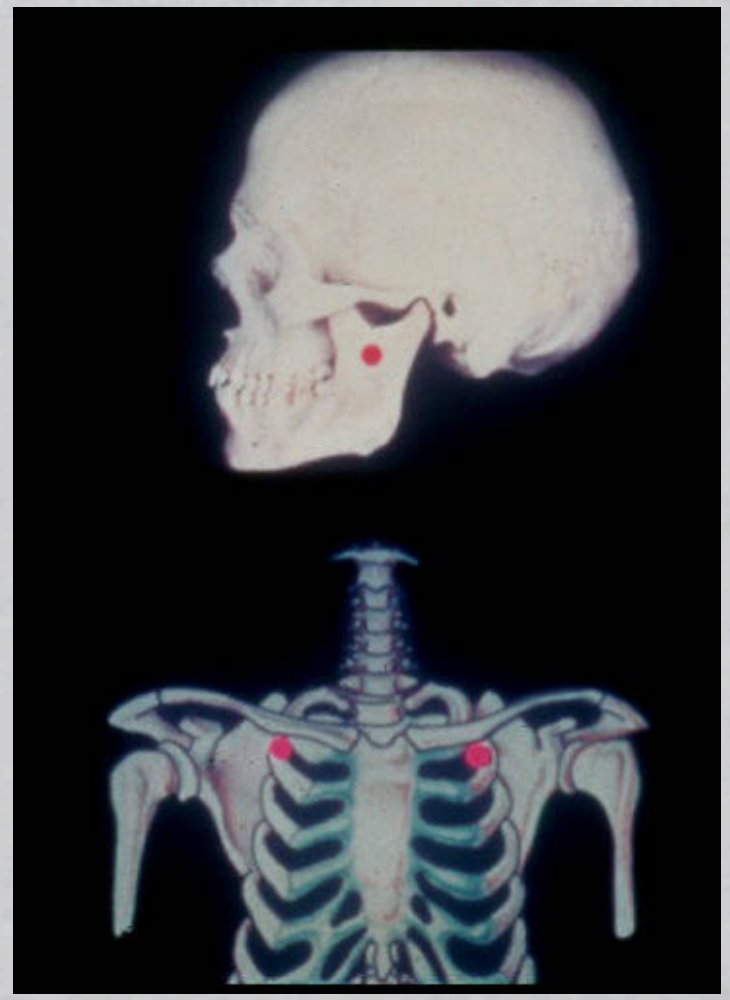
Sternocleidomastoid








Sternocleidomastoid



Sternocleidomastoid



Sinuses

Stomach Meridian

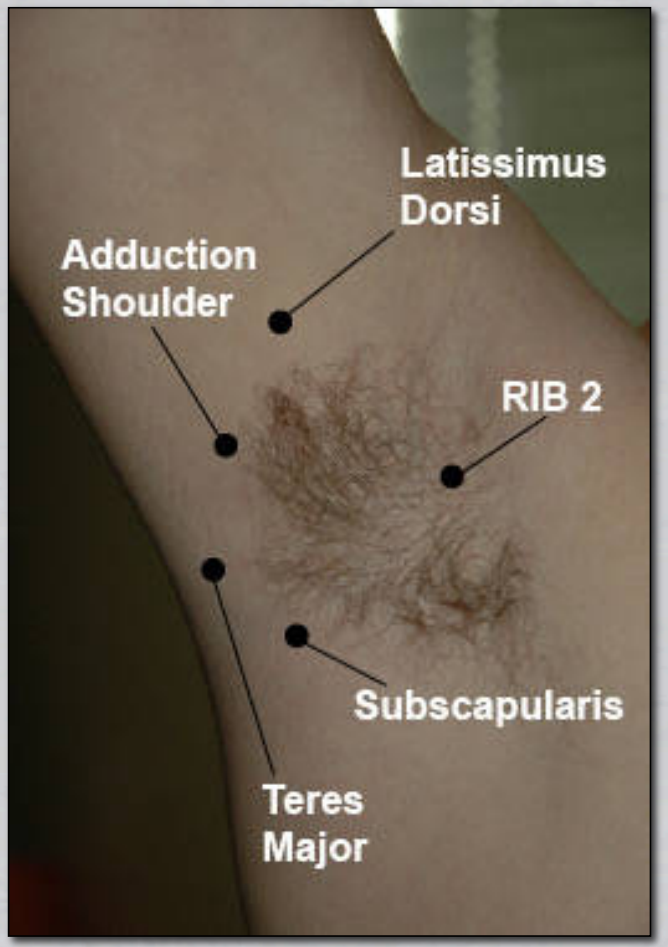
Nerve Supply:
Anterior Rami of C2, C3; Spinal Portion of Accessory Nerve (Cranial XI)

Common Subluxations:
Upper Cervical
Cranial Faults
Assoc. Pt. T12, L1

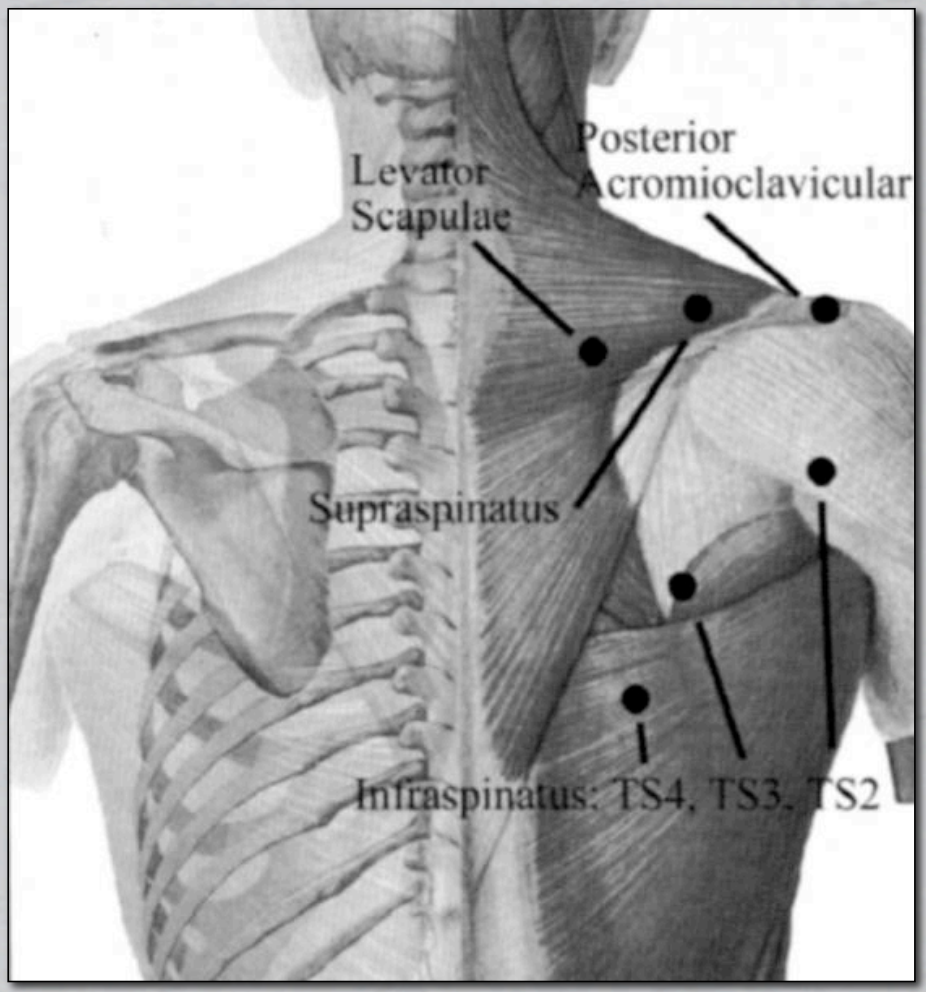
Nutrition:
Niacinamide or Niacin, Vitamin B_6
For Sinusitis, Organic Iodine

Subscapularis (SUB)

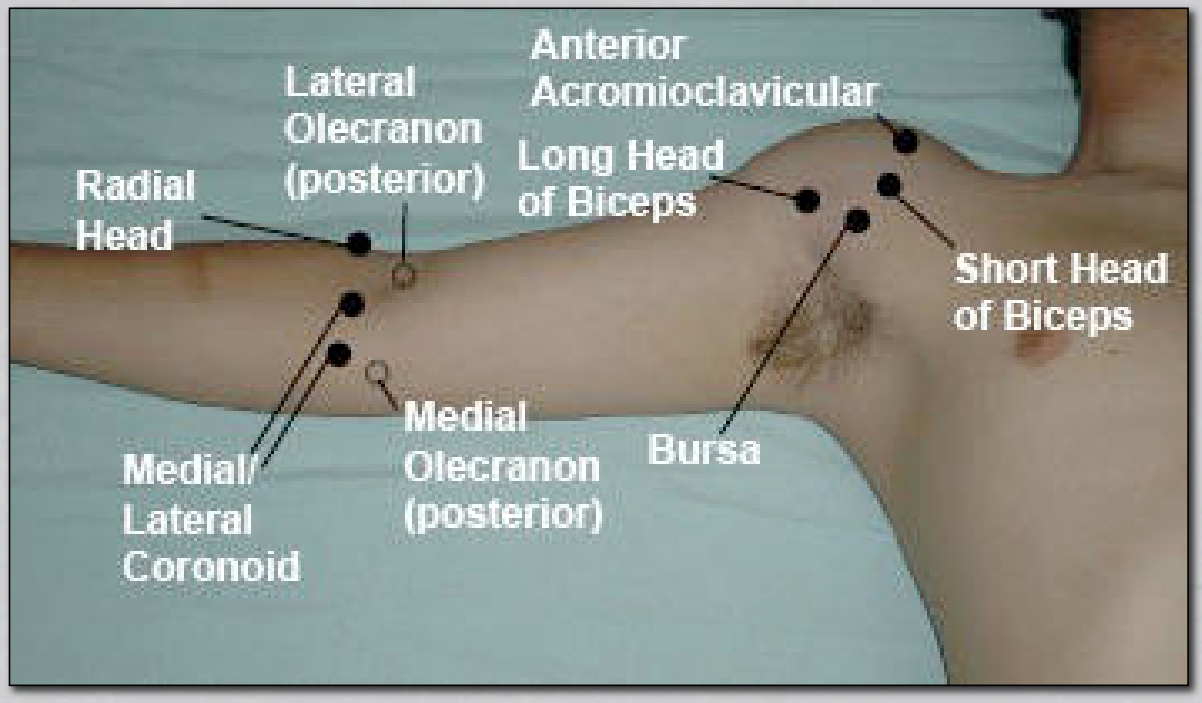
Tender Pt.:
On the anterior surface of the scapula, in the posterior axillary fold.



Posterior Shoulder Tender Points



Upper Extremity Tender Points



Subscapularis (SUB)

Treatment:
Patient supine, shoulder on table.
Extension - 30° - 40°
Rotation - internal
Abduction - slight
Traction - usually marked, 3kg, verbally ask patient to relax their shoulder.



Adduction Shoulder (Frozen Shoulder)

Treatment:
Patient supine. Operator places one hand in patient's axilla, the other on elbow inducing hyper-adduction of shoulder.
Adduction - marked
Rotation - slight internal
Compression - slight at elbow



Latissimus Dorsi (LD)

Tender Pt.:
On the medial superior shaft of the humerus in the lateral axilla.



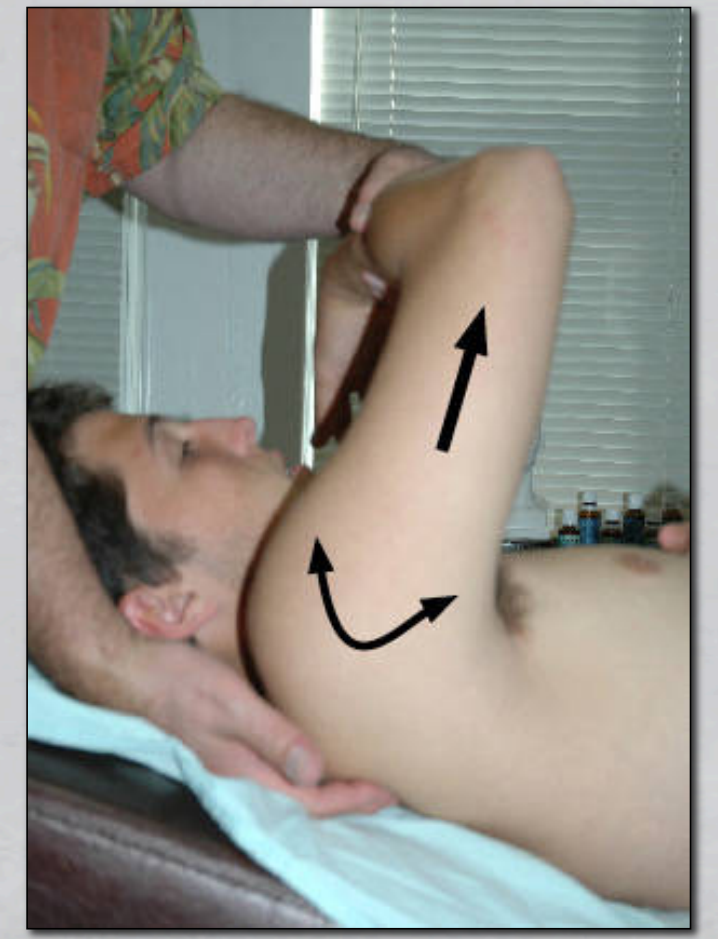
Latissimus Dorsi (LD)

Treatment:
Patient supine with shoulder off table. Operator applies traction to arm from wrist.
Extension - 30°-40°
Abduction - about 30°
Rotation - internal
Traction - strong



Infraspinatus & Supraspinatus (Statue of Liberty)

Treatment:
Patient supine,
Operator elevates patient arm over head. (Statue of Liberty)
Flexion 90°
Rotation - variable external
Adduction - slight
Traction - mild



Posterior Acromioclavicular (PAC)

Treatment:
Patient prone. Operator places traction on arm from wrist.
Extension - slight
Adduction - slight
Traction - marked



Levator Scapulae (LS)

Treatment:
Patient prone, head rotated towards TP. Operator on same side of table as tender point. Patient grasps operator's leg to induce rotation of arm. Operator places traction on arm.Rotation - moderate of arm either internally or externally (whichever is of greatest ease to patient) Traction - marked.



Anterior Acromioclavicular (AAC)

Treatment:
Patient supine. Operator on opposite side of table as tender point, applies traction of arm across chest and caudad.
Adduction - variable 30°-50°
Flexion - slight
Rotation - internal
Traction - moderate



Long Head of Biceps and Bursa

Treatment:

Patient supine. Flexion - shoulder 90°, Fully and gently flex elbow

Rotation - internally or externally for comfort



Myofascial Release:
Getting control of the scapula



Myofascial Release:
Alternate control grip of scapula



Myofascial Release:
Superior glide of scapula/inferior glide of scapula



Myofascial Release:
Retraction glide of scapula

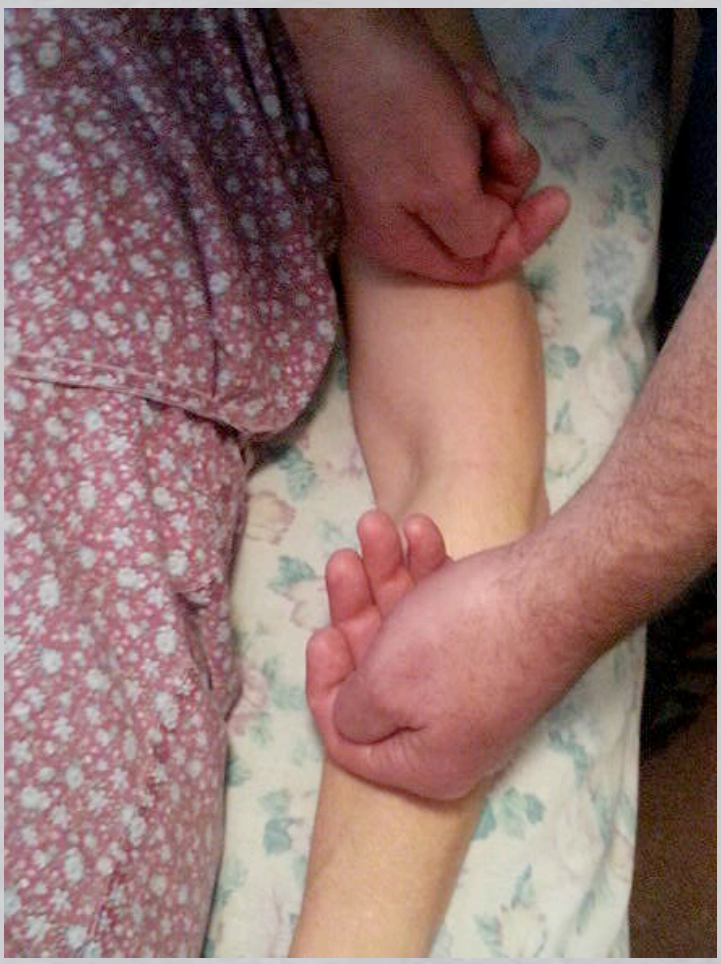


Myofascial Release:
Protraction glide of scapula

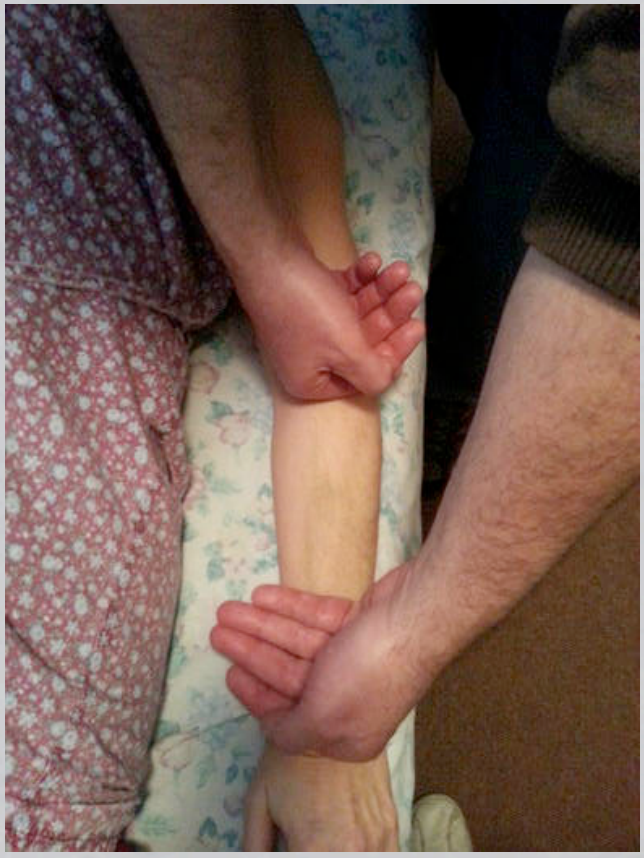


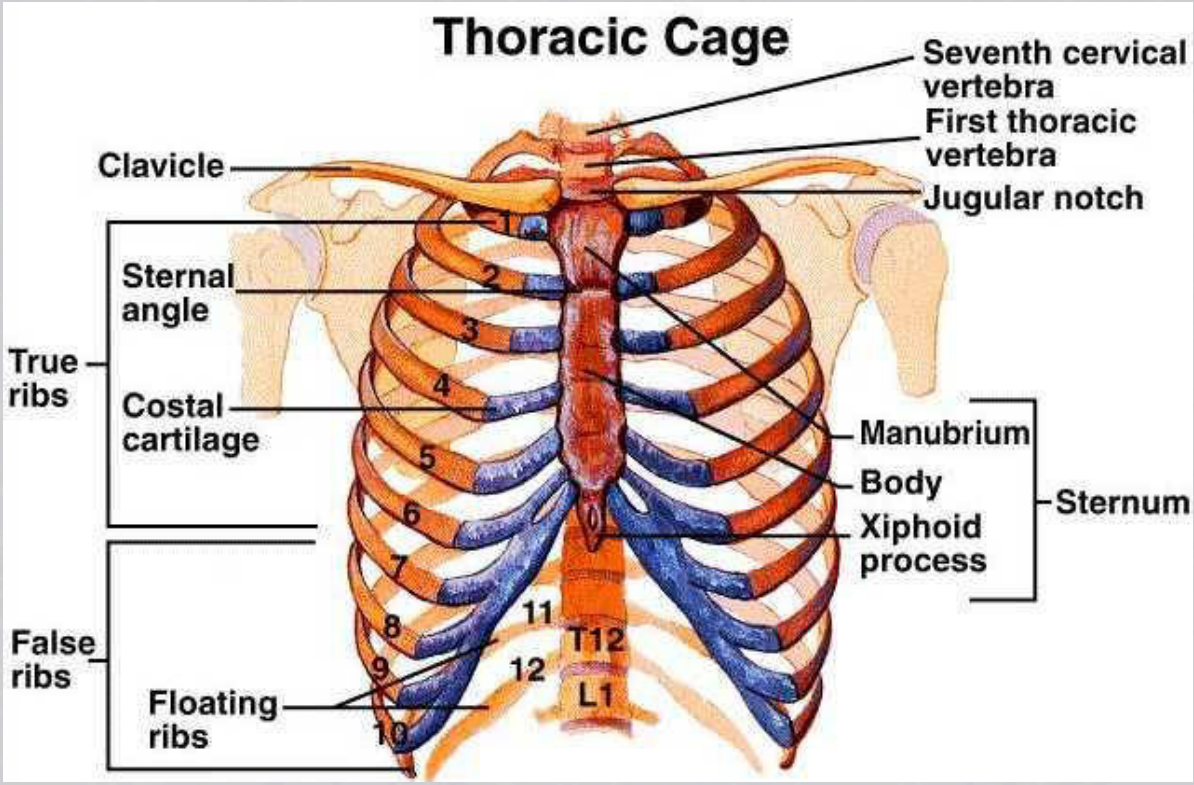
DIRECT MYOFASCIAL RELEASE OF UPPER EXTREMITY ANTERIOR CHAIN





GOOD FOR RELEASING TENSION FROM WRITING, TYPING AND COMPUTER MOUSE WORK

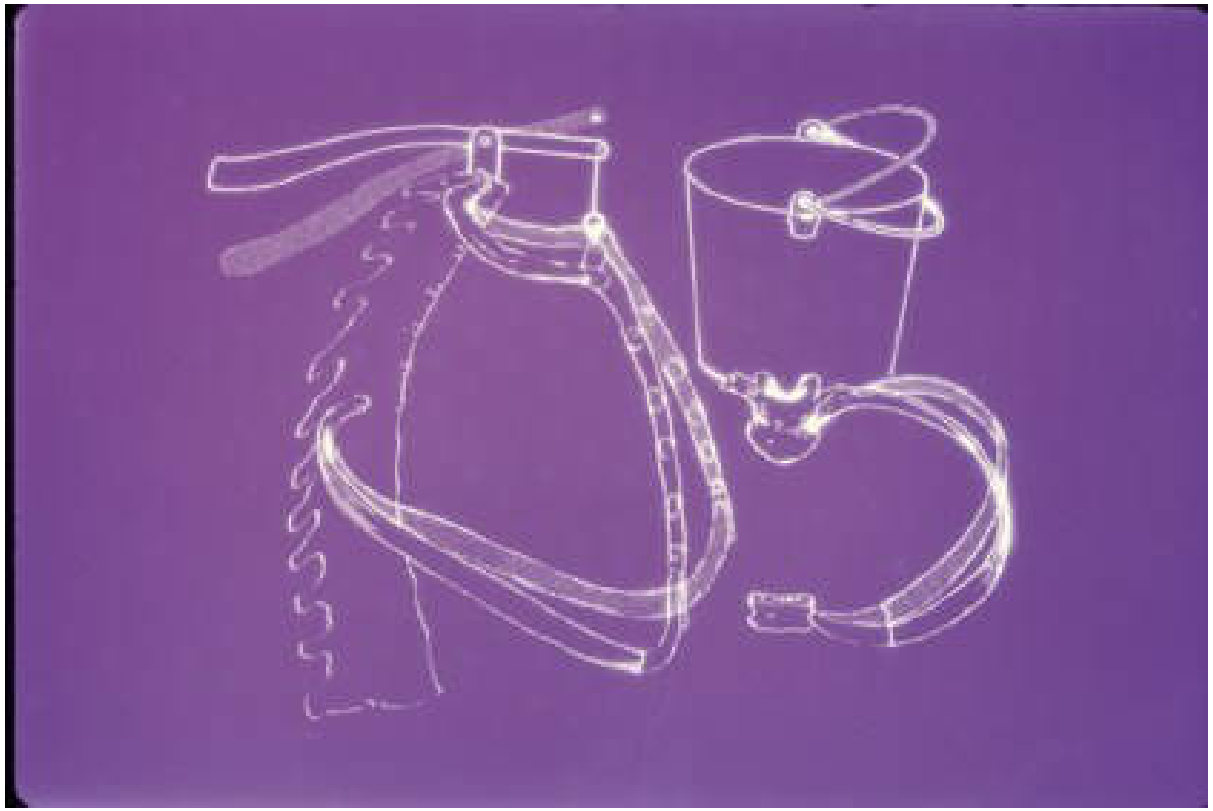



Thoracic Cage
Seventh cervical vertebra
First thoracic vertebra
Jugular notch
Clavicle
Sternal angle
True ribs
Costal cartilage
False ribs
Floating ribs
Manubrium
Body
Xiphoid process
Sternum
1
2
3
4
5
6
7
8
9
10
11
12
T12
L1

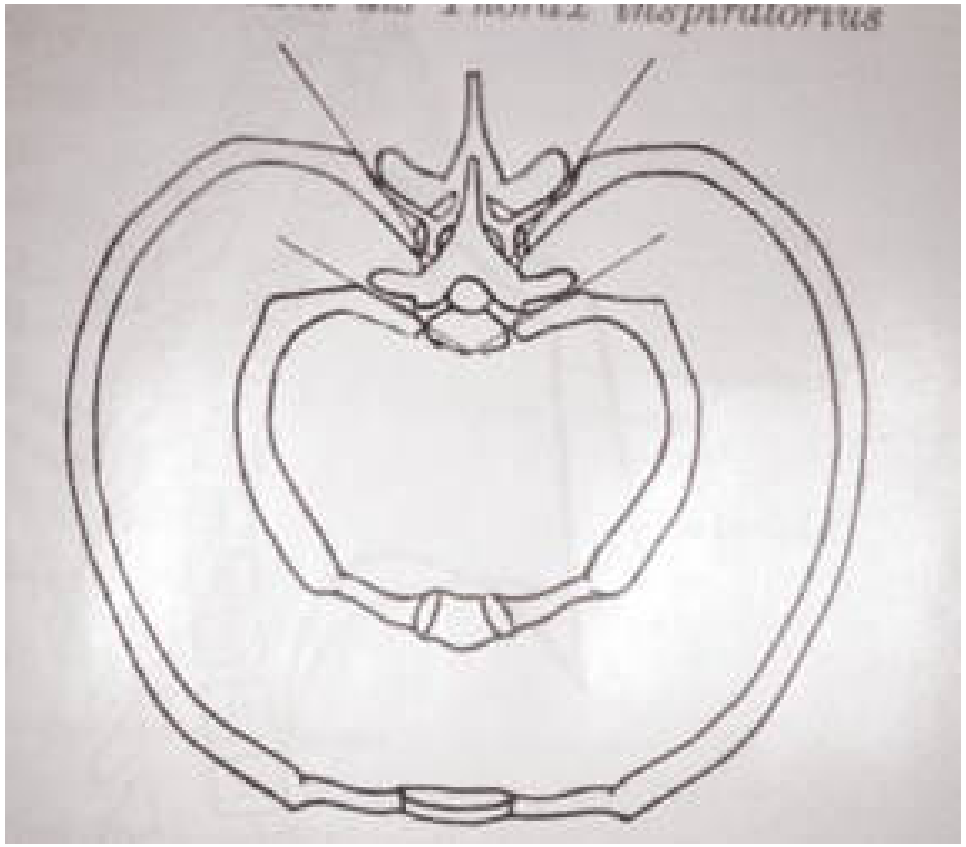
Manipulable Conditions for Part 2

- Structural rib lesions
  - Rib subluxations
  - A-P and Lateral intraosseous rib strain
  - Rib torsion
- Respiratory rib restrictions
- ERS and FRS segmental dysfunctions of the Thoracic and Lumbar spine
- Abdominal muscle imbalance

Pump-handle and Bucket-handle Rib Motion



PUMP- & BUCKET-HANDLE



Costo-transverse, Costochondral, and Costovertebral Anatomy

Unique Sets

- Ribs I – Costomanubrial is synchondrosis.
- Ribs ii – Demifacets posterior & anterior.
- Ribs iii, iv, and v – Too stiff for torsion.
- Ribs vi, vii, and viii – May be torsioned.
- Ribs ix and x – Large rib angles.
- Ribs xi and xii – No costotransverse.

Find Key Rib





- If ribs are down (inhale restriction), key is top rib.
- If ribs are up (exhale restriction), key is bottom rib.

Step-breathing Testing for Restricted Inhalation

- Watch your hands or fingers follow rib motion while patient fully inhales, then does a series of small, shallow breaths in (fully) and out slightly.
- If the rib(s) on one side do(es) not move, the **highest** rib in that group did not fully inhale and is the key to the group's restricted inhalation motion.
- The key rib identifies the vertebra with segmental dysfunction, due to impaired zygapophyseal arthrokinematics on the side of the restricted rib.

Vertebral Segmental Dysfunctions are Either ERS or FRS

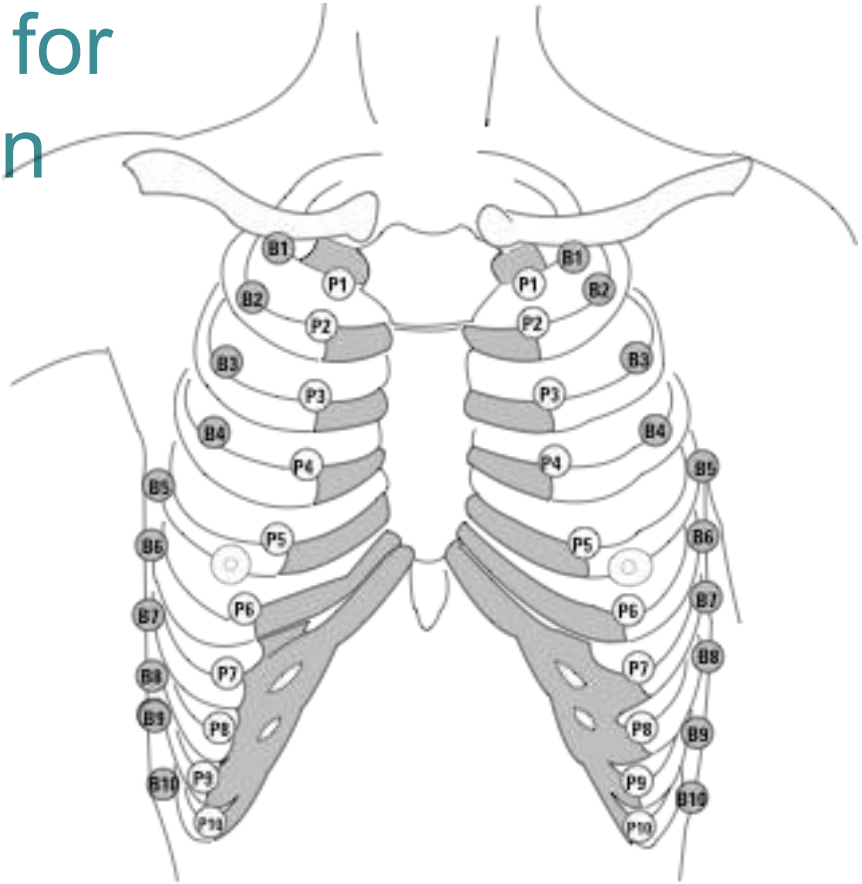
- Respiratory rib motion becomes symmetrical when the vertebral segment is hyperextended.
- The vertebra is rotated and sidebent **to the side** of rib restriction.

- Respiratory rib motion becomes symmetrical when the vertebral segment is hyperflexed.
- The vertebra is rotated and sidebent **away from the side** of rib restriction

Contact Points for Rib Evaluation

P = Pump Handle

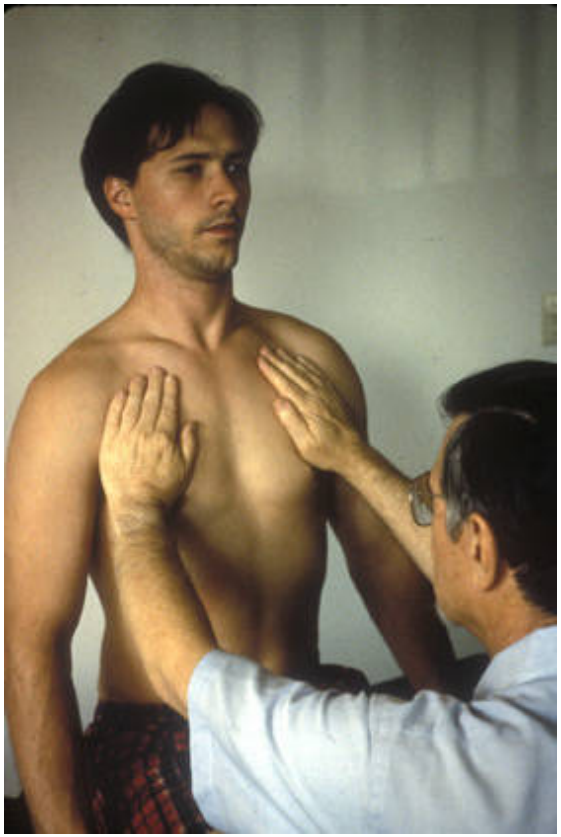
B = Bucket Handle



Front and back rib screening

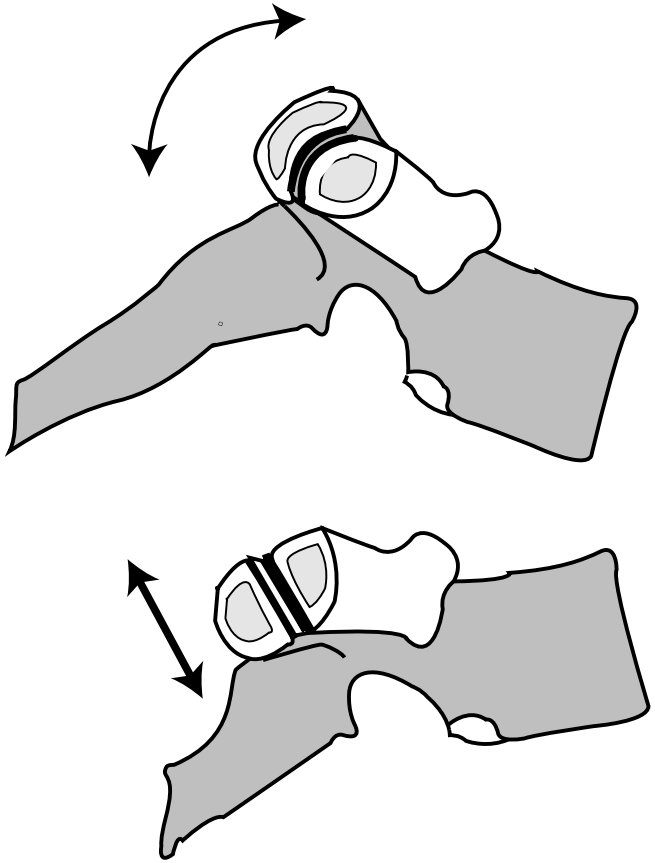


Observing rib motion on extended thoracic spine





Costo-transverse Variations



Bending and Breathing



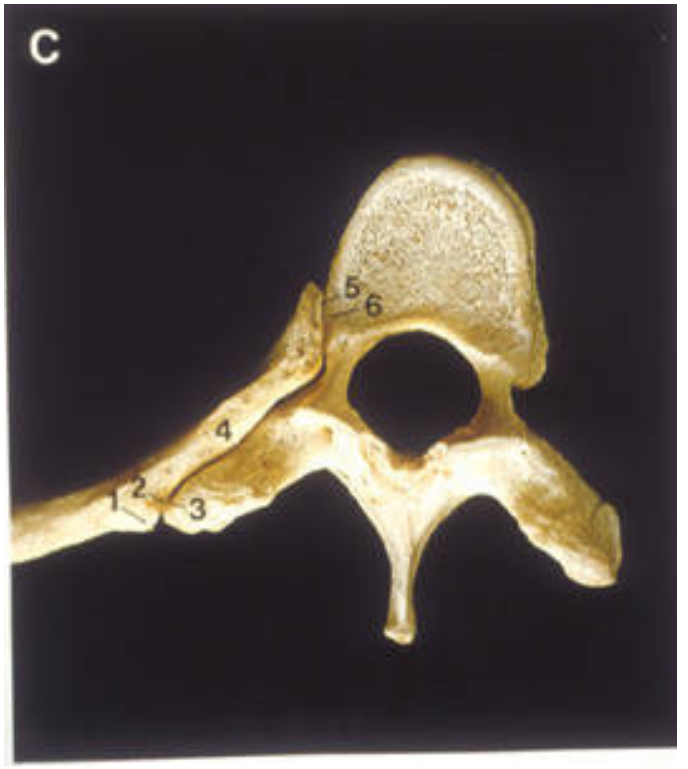


Bending and Breathing – 2





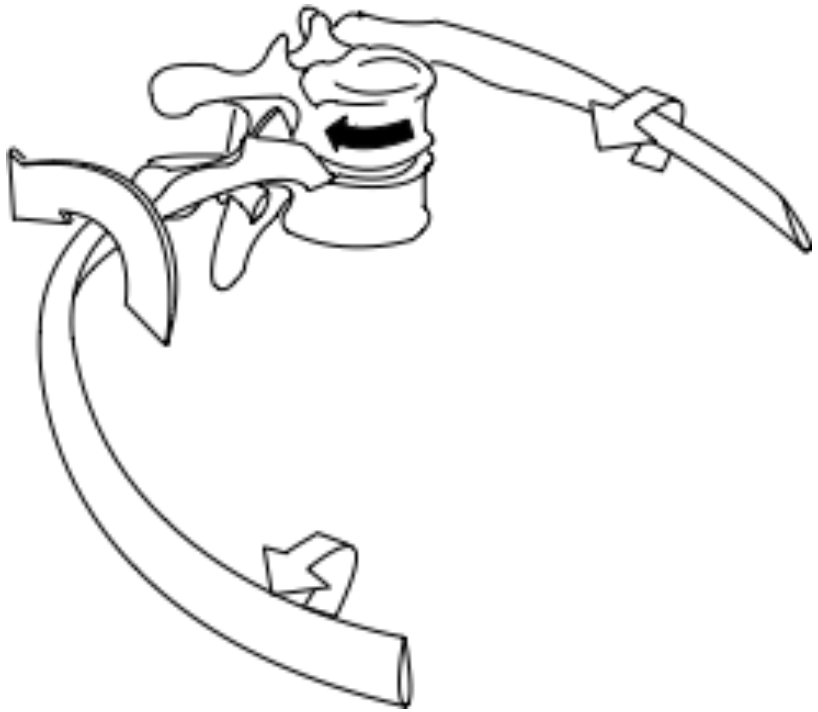
Costovertebral Relationships in Mid-thorax



When a vertebra flexes, where do its transverse processes go?

- All transverse processes should move craniad and anterior.
- Because of the dorsal kyphosis, anterior movement is greater in the upper six thoracic vertebrae (craniad is forward).
- Craniad movement should be uniform throughout the thoracic and lumbar spine.
- Anterior translation of a vertebra is coupled to flexion (+X-axis rotation).

Rib torsion



Key rib identifies ERS or FRS vertebral dysfunction

- ERS
  - Ribs move symmetrically when spine is extended.
  - When spine is not extended, exhale or inhale restriction of the rib on the side of the posterior transverse process (the side of restricted facet).
- FRS
  - Ribs move symmetrically when spine is flexed.
  - When spine is not flexed, exhale or inhale restriction of the rib on the side of the anterior transverse process (the side of restricted facet)

Segmental Dysfunction

Major

- Rib restriction found in erect posture.
- ERS. Rib motion becomes symmetrical in relatively extreme spinal extension.
- FRS. Rib motion symmetrical in extreme flexion.

Minor

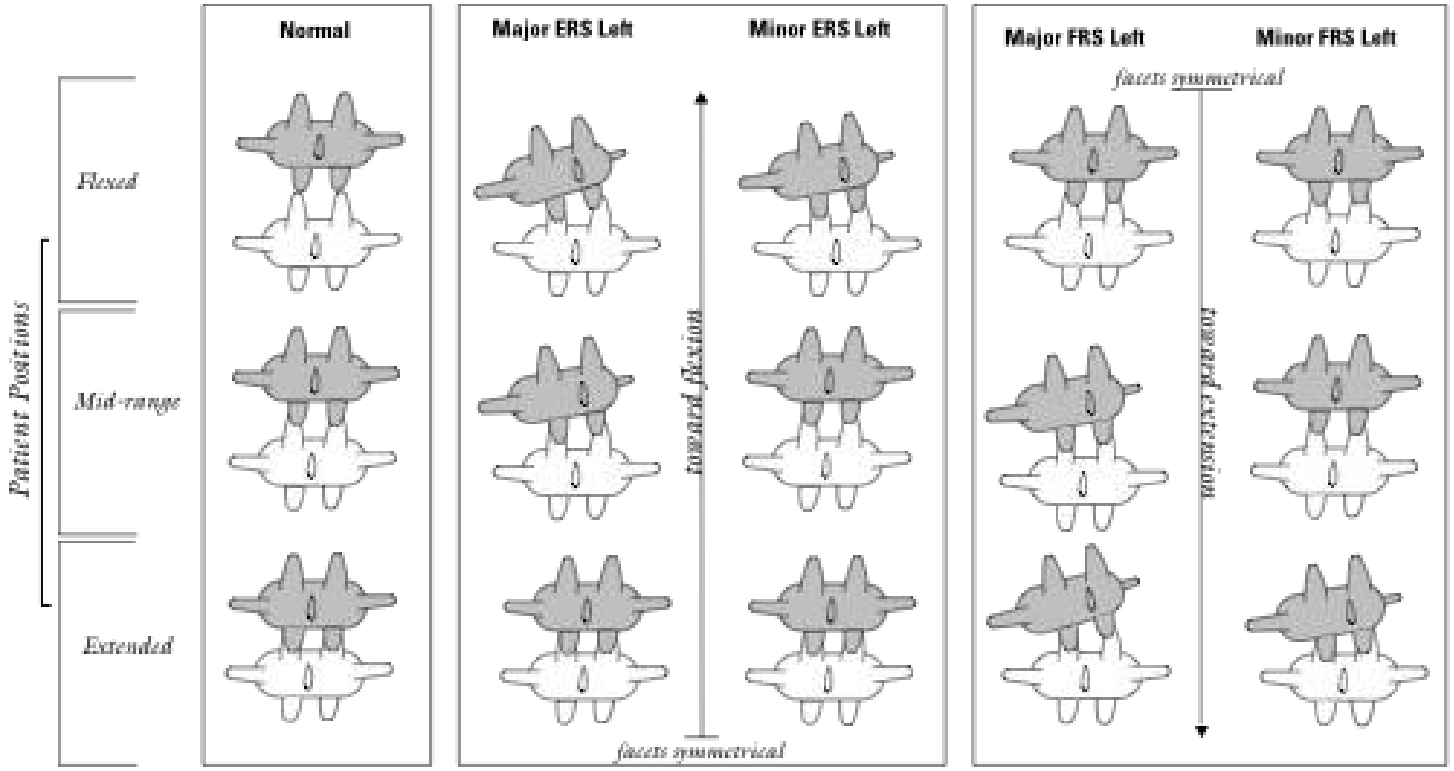
- Rib motion is symmetrical in erect posture.
- ERS. Rib restriction found in flexed position.
- FRS. Rib restriction found in extended position.

Tangent view of upper back

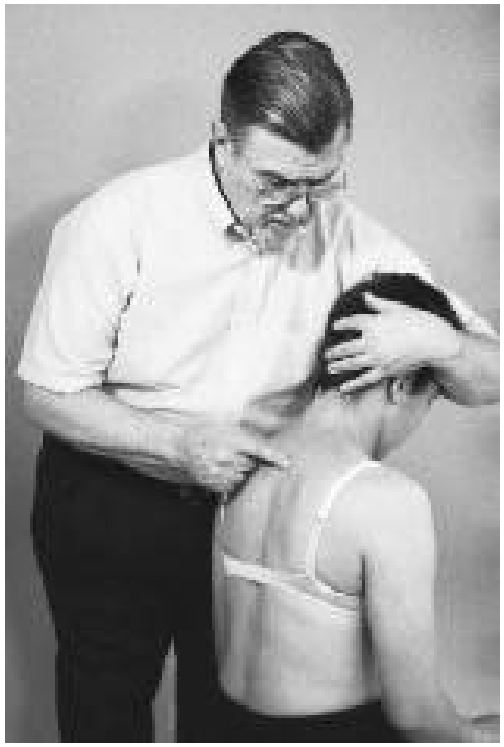


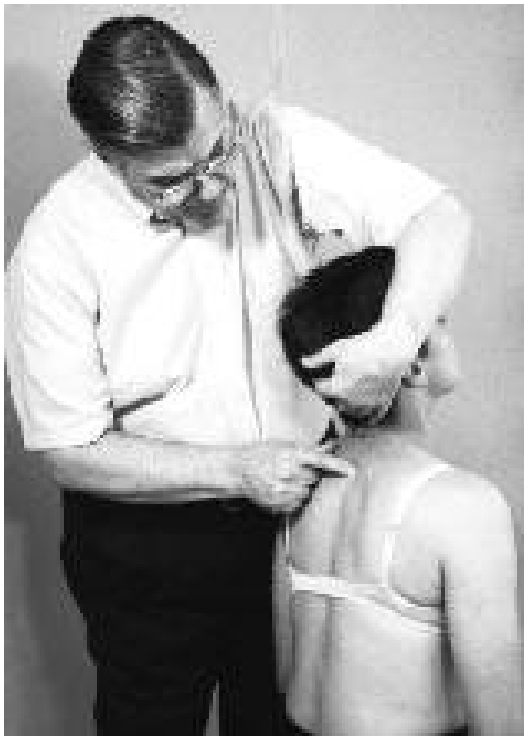
ERS and FRS Mechanics in Sagittal Plane Motion

Normal Major ERS Minor ERS FRSL



Turban Technique





- For minor ERSR For major ERSR

Longus Colli Technique

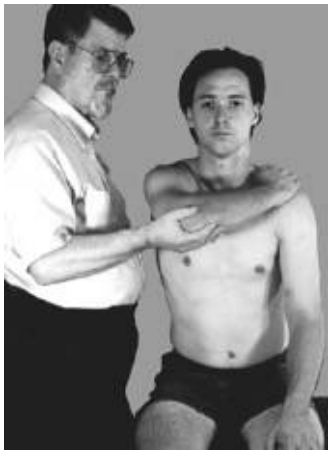








Modified Longus Colli











Diaphragm Release

Apply Cream to Reduce Friction



Diaphragm Release

Thumb Under Costal Margin



Diaphragm Release

Curl Fingers Under Costal Edge



Diaphragm Release

<u>VERY</u> Slow Movement From Medial to Lateral



Diaphragm Release

Thumb Under Costal Cage



Diaphragm Release

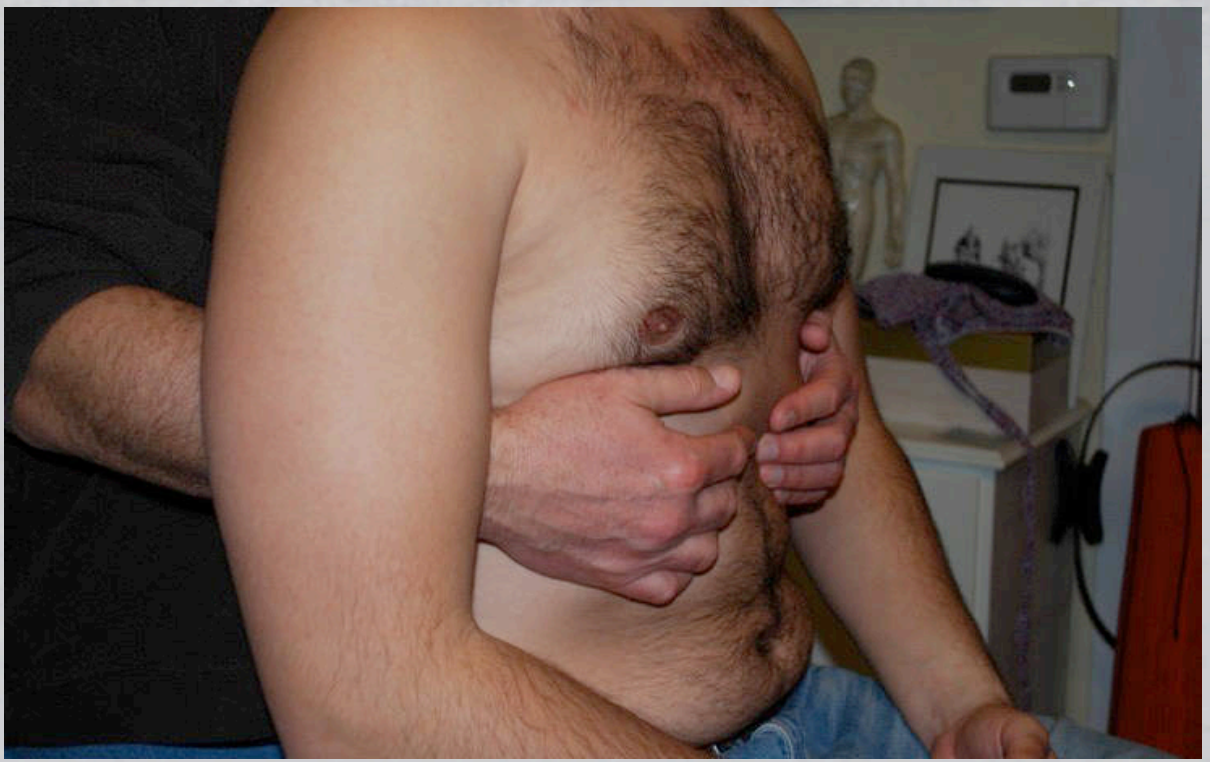
Fingers in Midline Between Xiphoid and Umbilicus
NOT ON AORTA!!
Focus into the Point of Greatest Tension on each Exhalation



Myofascial Release

Direct or Indirect Approach To Thoraco-Lumbar Area (Back of Diaphragm)





DIAPHRAGM RELEASE SEATED: BILATERAL UNWINDING



DIAPHRAGM RELEASE SEATED:
FEEL TENSION AT XIPHOID AREA



DIAPHRAGM RELEASE OF TRAUMA: FULFORD LINEA ALBA

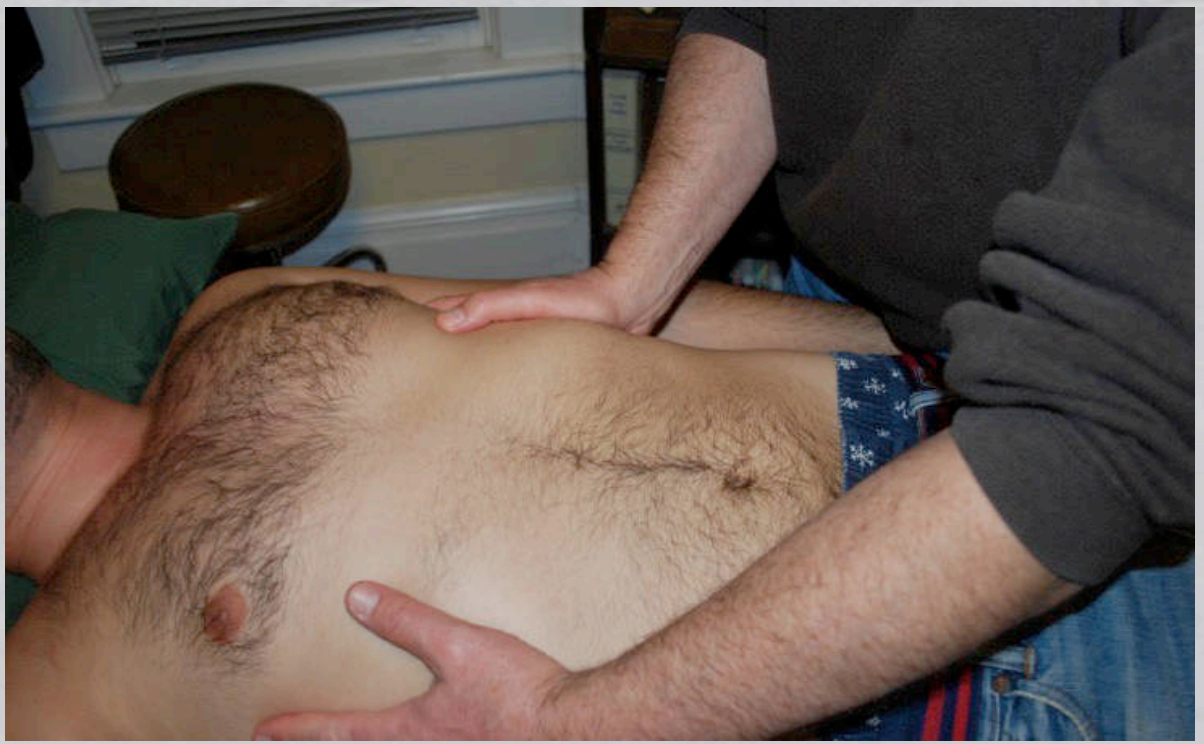


DIAPHRAGM RELEASE:
DIRECT SUB-COSTAL FASCIA RELEASE B/L

Myofascial Release

Direct or Indirect Approach To Thoraco-Lumbar Area (Back of Diaphragm)





MYOFASCIAL RELEASE:
LATERAL SHEAR OF THORAX MOTION TEST



MYOFASCIAL RELEASE:
SUPERIOR-INFERIOR SHEAR MOTION TEST



MYOFASCIAL RELEASE:
ROTATION OF THORAX MOTION TEST



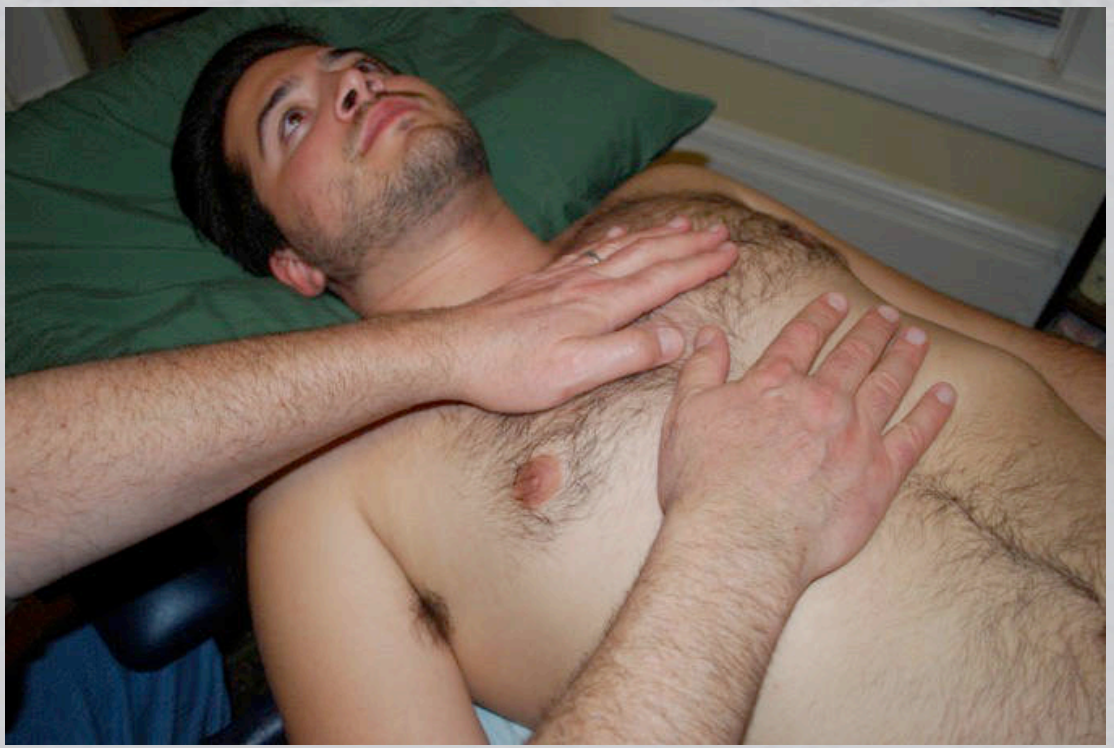
MYOFASCIAL RELEASE:
MONITORING EFFECT OF INHALATION



MYOFASCIAL RELEASE:
MONITORING THE EFFECT OF EXPIRATION



MYOFASCIAL RELEASE:
A-P RELEASE OF THORAX

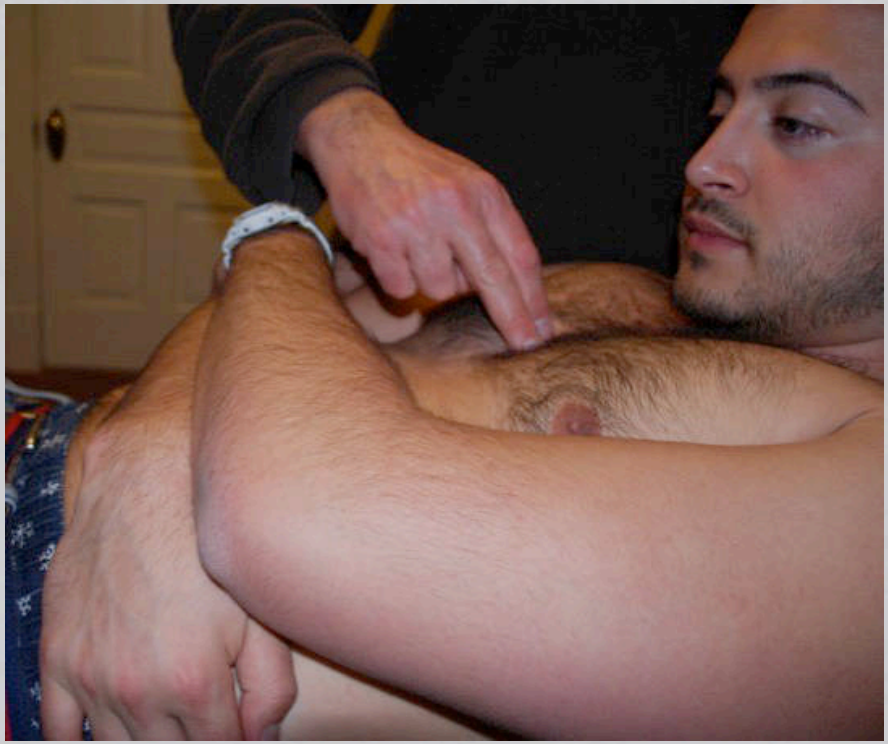


MYOFASCIAL RELEASE:
BILATERAL RELEASE OF CHEST MIDLINE



MYOFASCIAL RELEASE:
THORACIC INLET-XIPHOID CONNECTION

COUNTERSTRAIN:
RELEASE OF ANTERIOR
TENDERPOINT STERNUM





COUNTERSTRAIN:
RELEASE OF ANTERIOR T-1/T-2



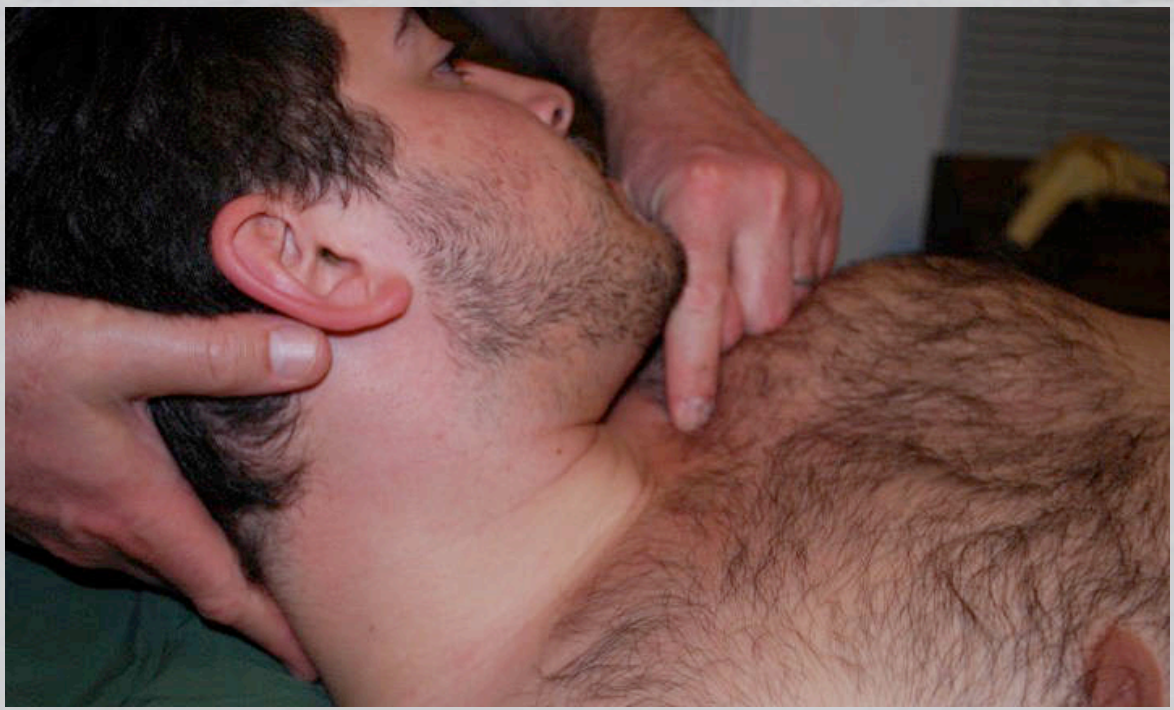
COUNTERSTRAIN:
RELEASE OF SUPERIOR 1ST RIB
TENDERPOINT



COUNTERSTRAIN:
RELEASE OF T1-T3 POSTERIOR TENDERPOINTS



COUNTERSTRAIN:
RELEASE OF T4-T6 POSTERIOR TENDERPOINTS

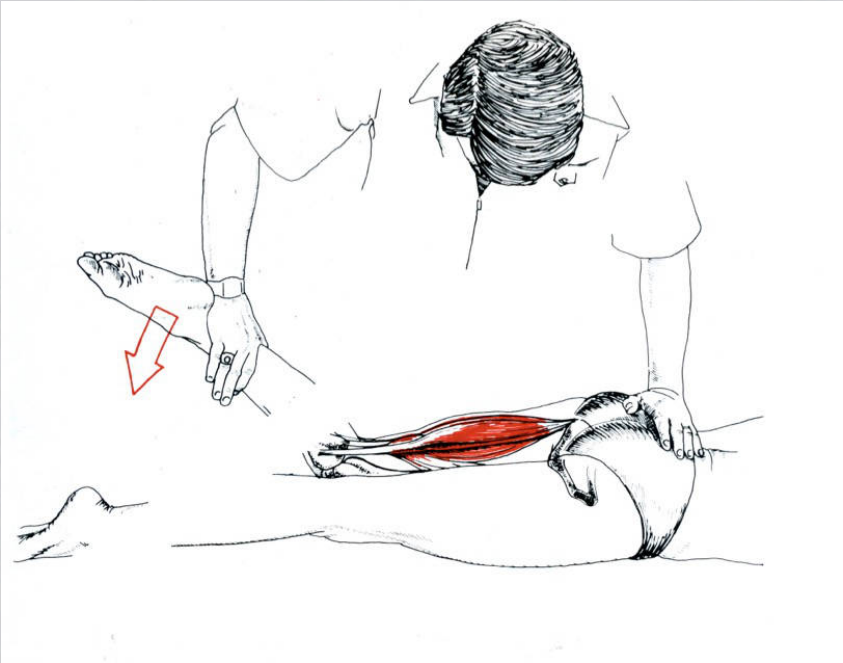


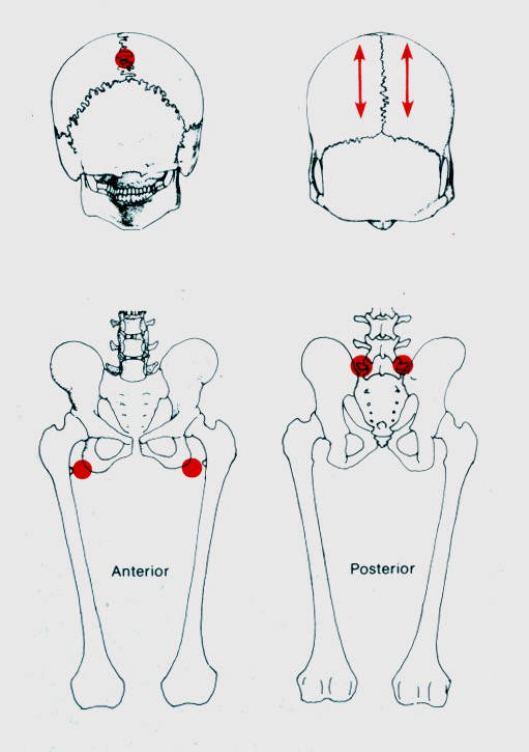
COUNTERSTRAIN:
RELEASE FOR TRACHEA/ CHRONIC COUGH



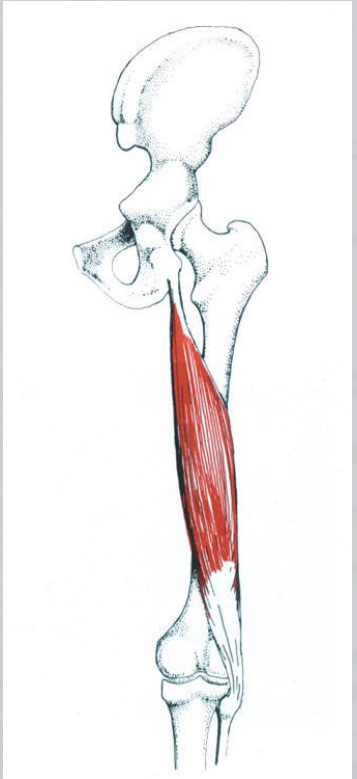
THRUST TECHNIQUE:
LOCATING A RESTRICTED SEGMENT

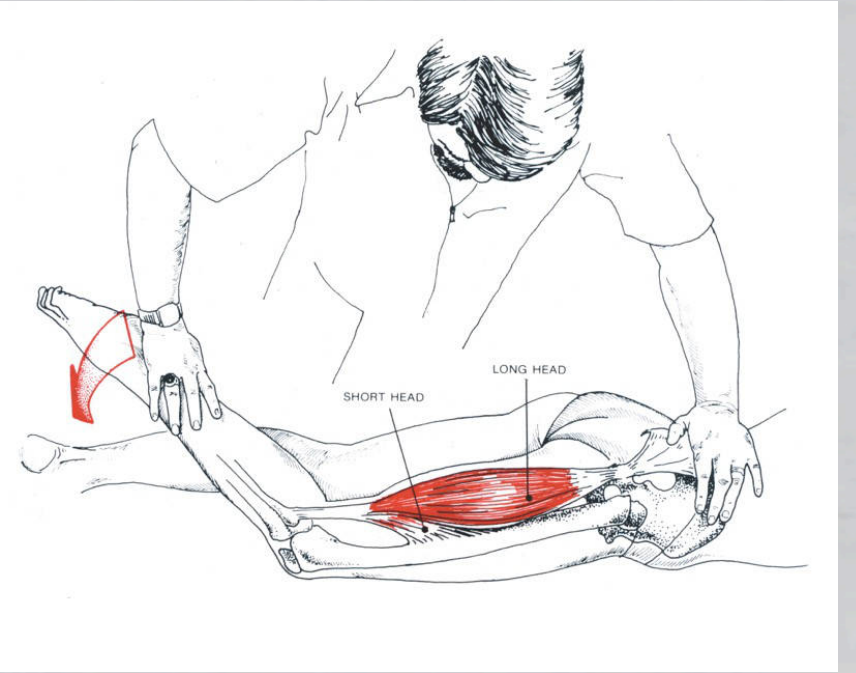
Hamstring



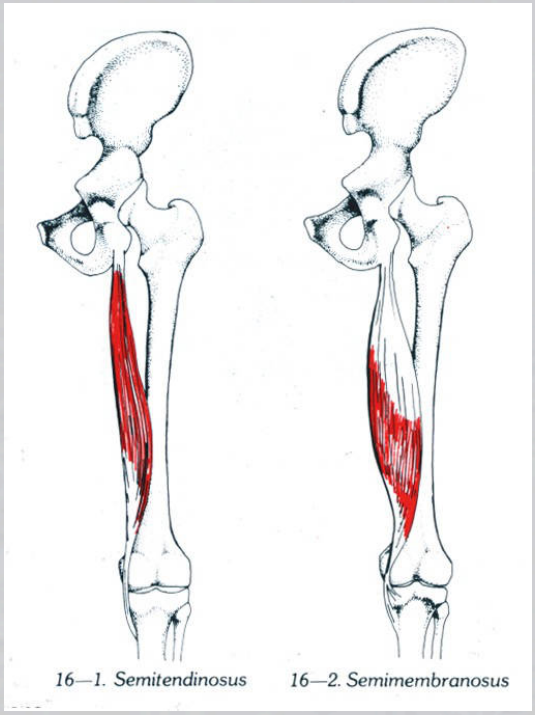


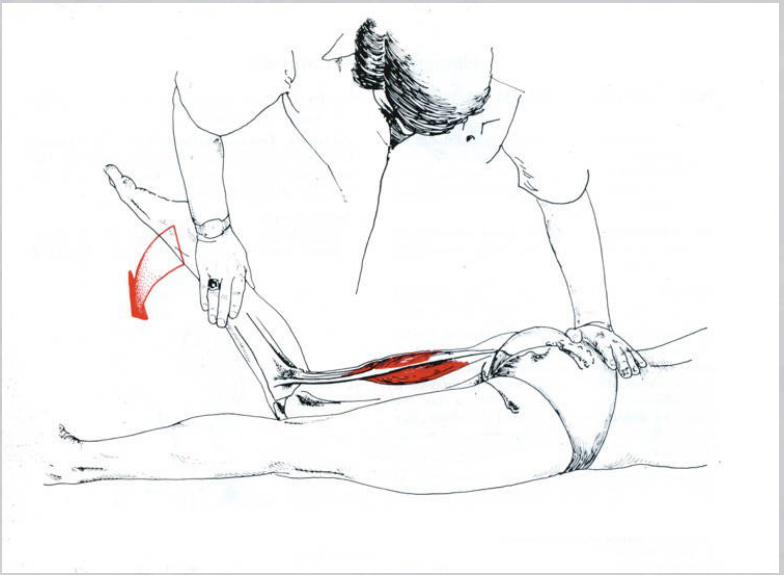
Hamstring - Lateral



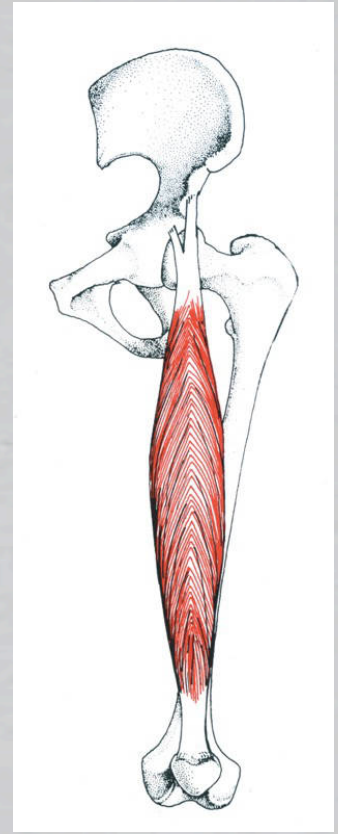


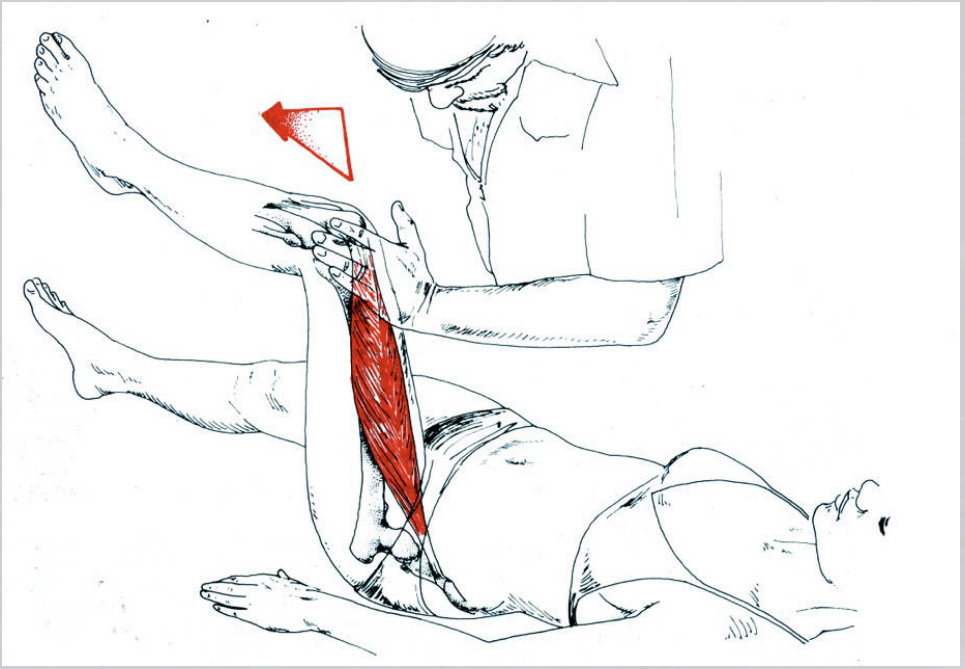
Hamstring - Medial



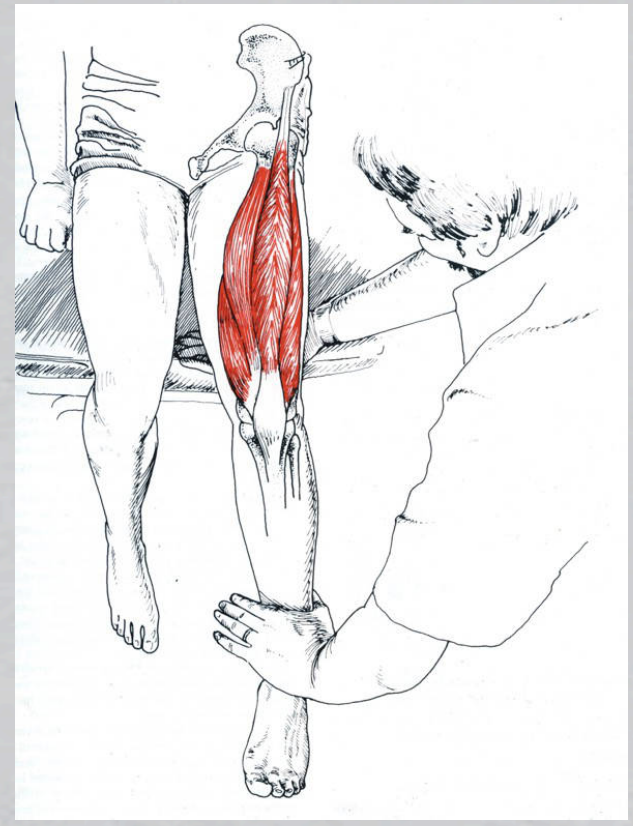


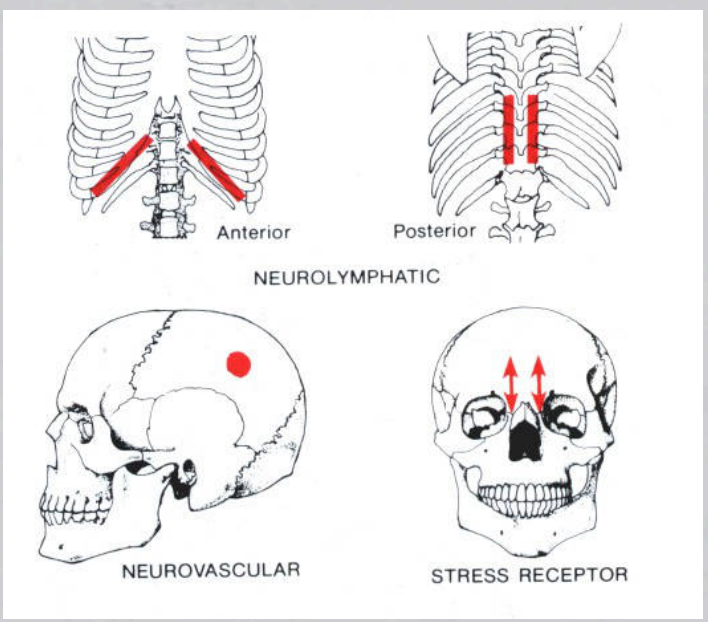
Quadriceps



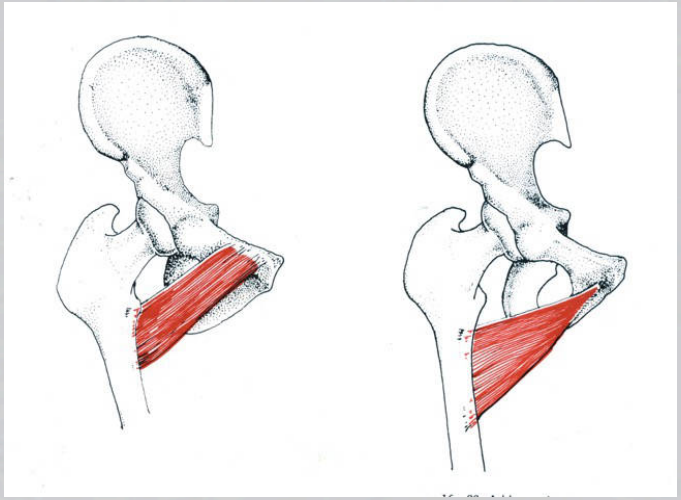


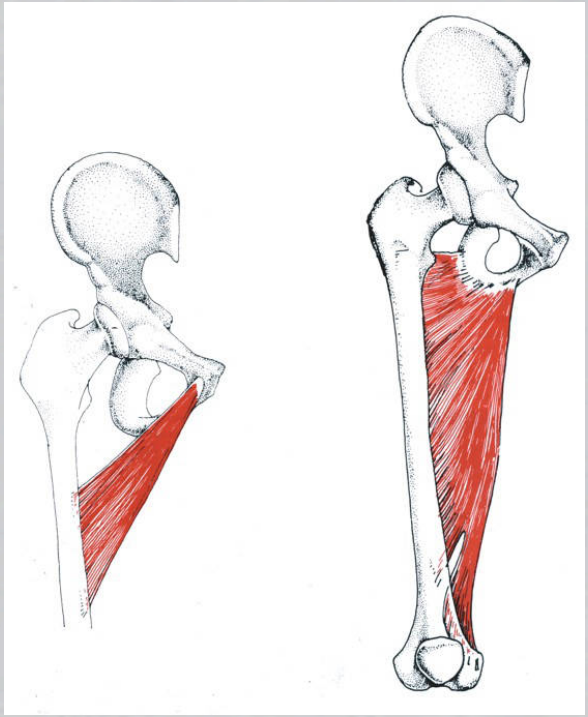
Quadriceps



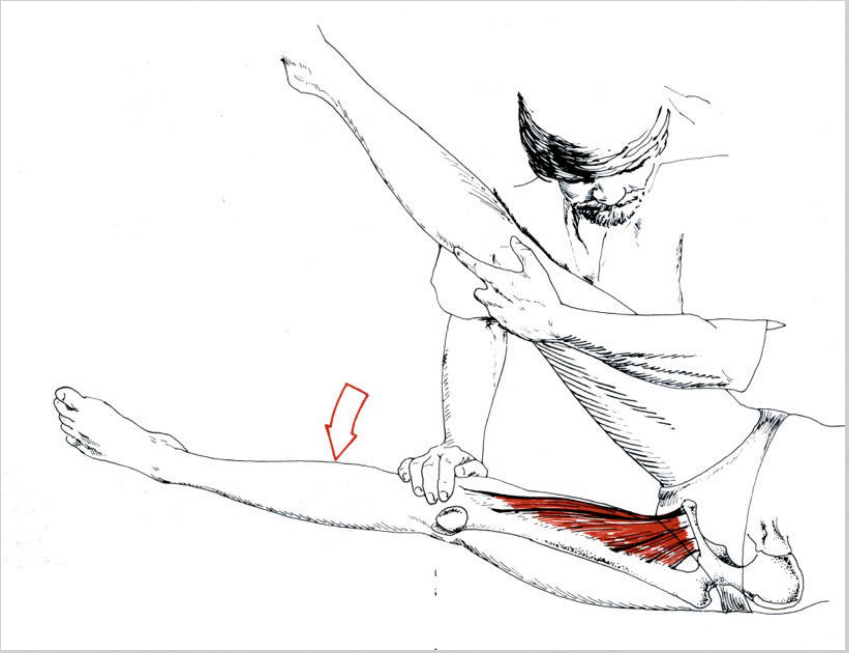

Anterior
Posterior
NEUROLYMPHATIC
NEUROVASCULAR
STRESS RECEPTOR

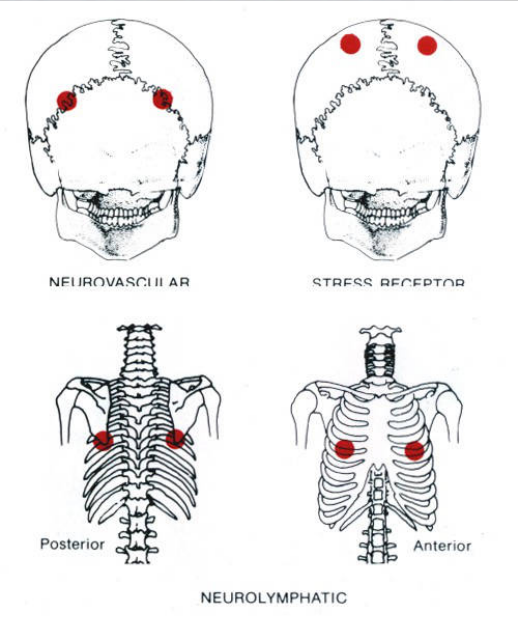
Adductors

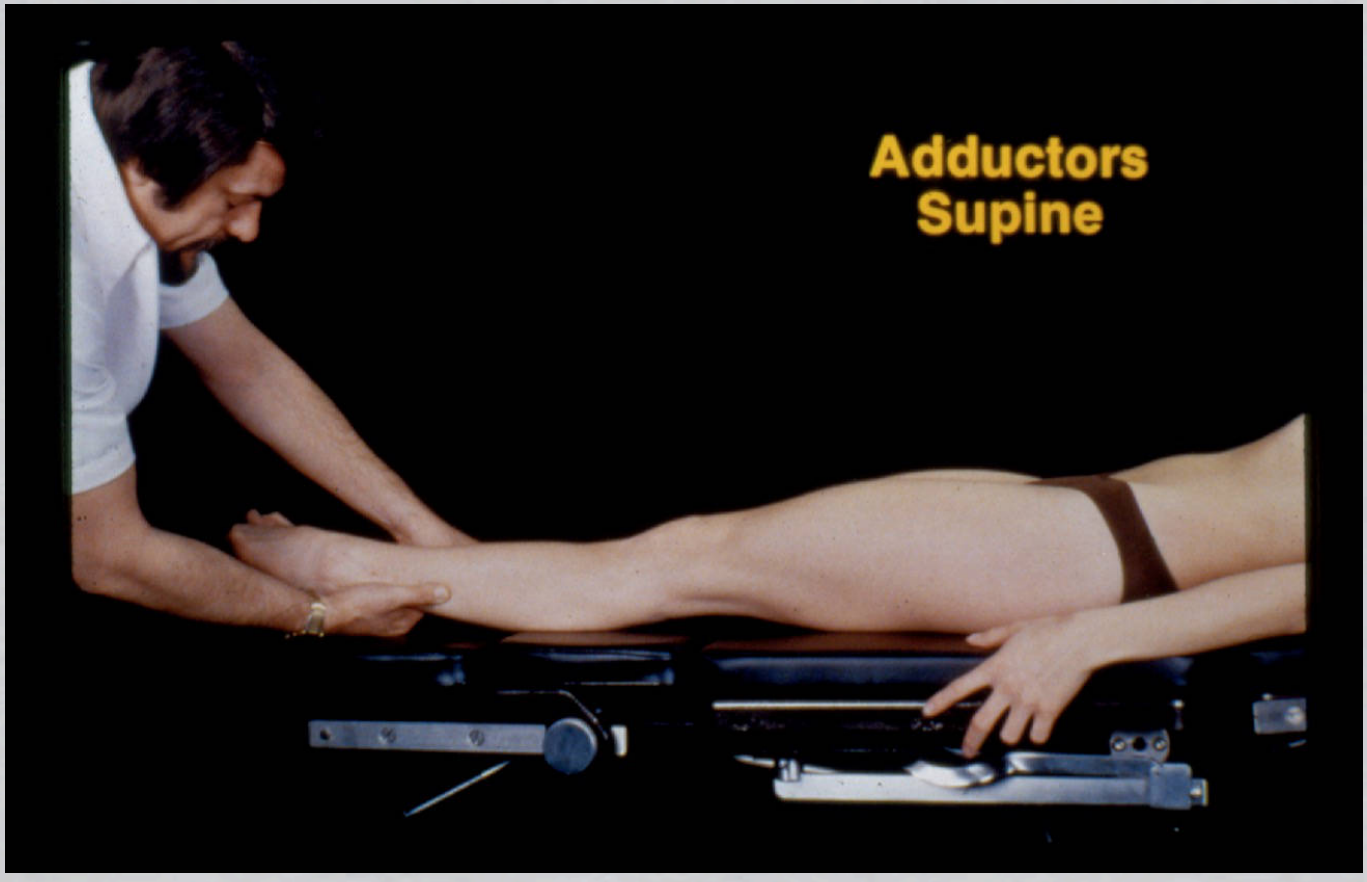




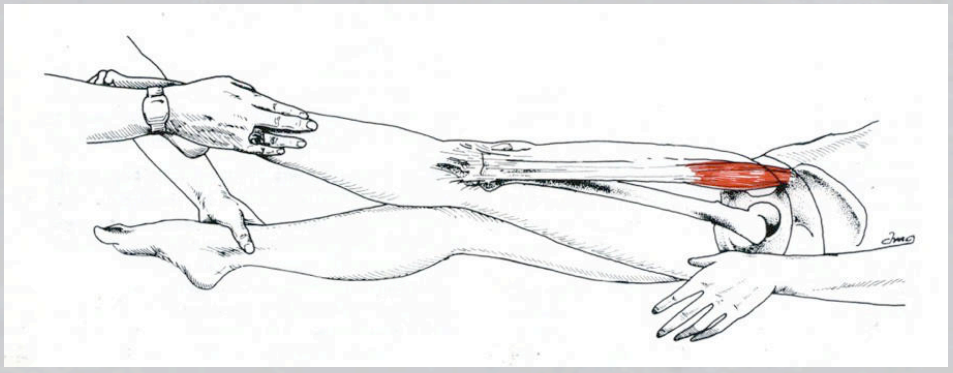
Adductors

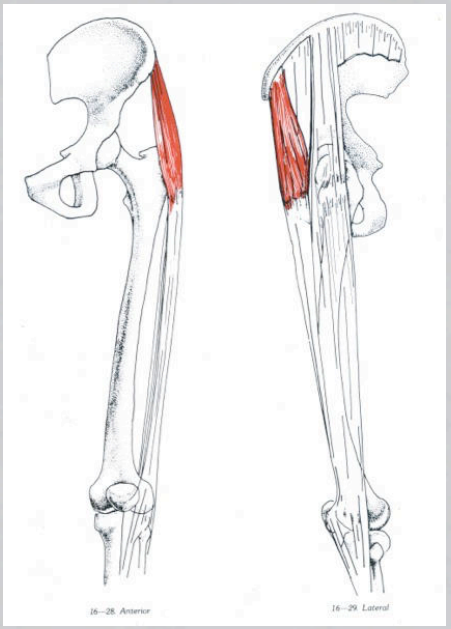


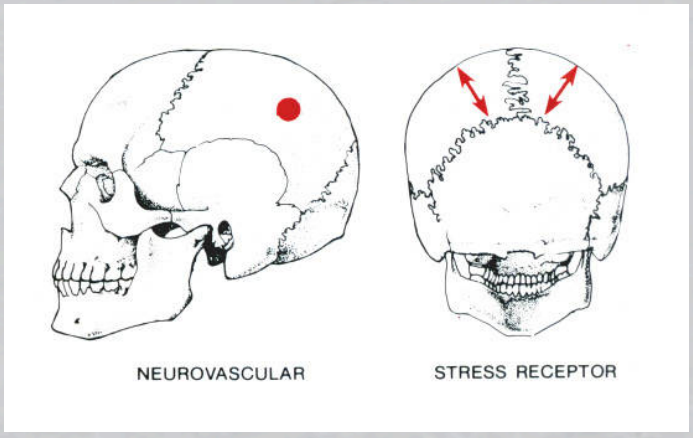

NEUROVASCULAR
STRESS RECEPTOR
Posterior
Anterior
NEUROLYMPHATIC


Adductors
Supine

Tensor Fascia Lata

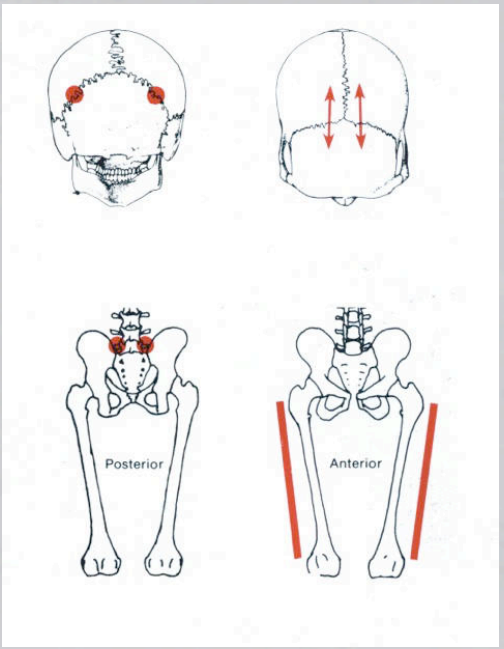




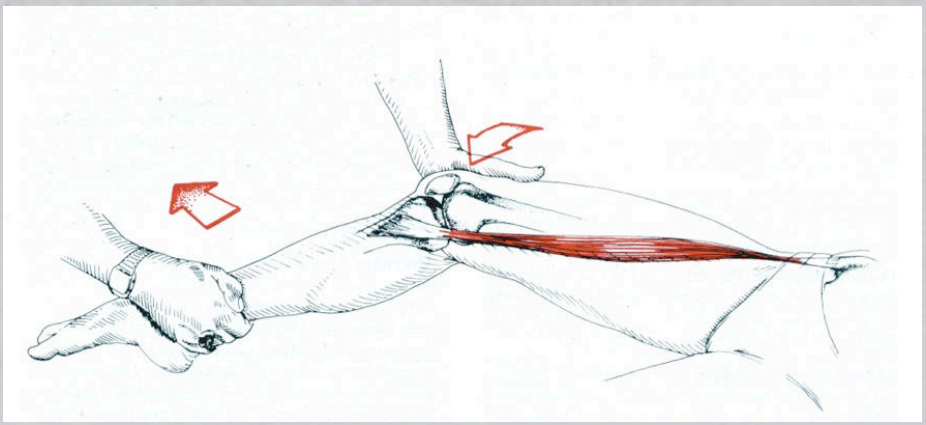


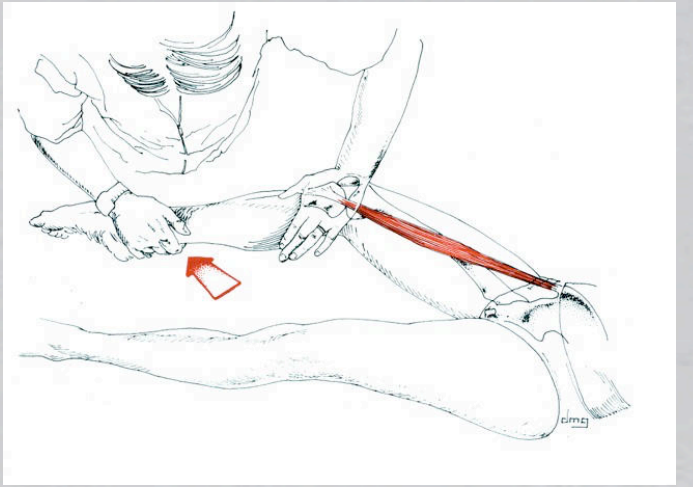
Gluteus Maximus

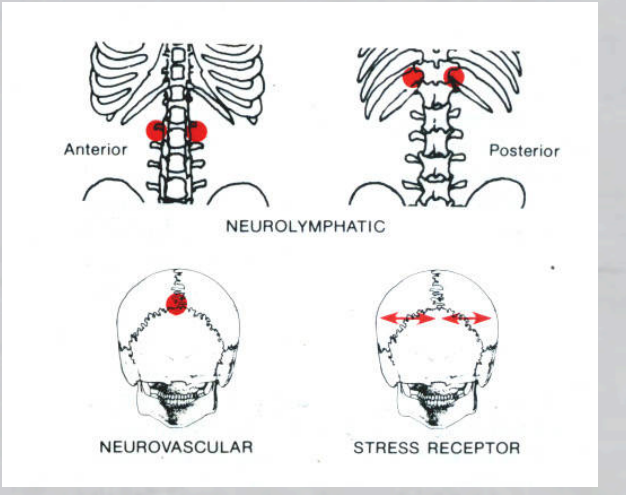




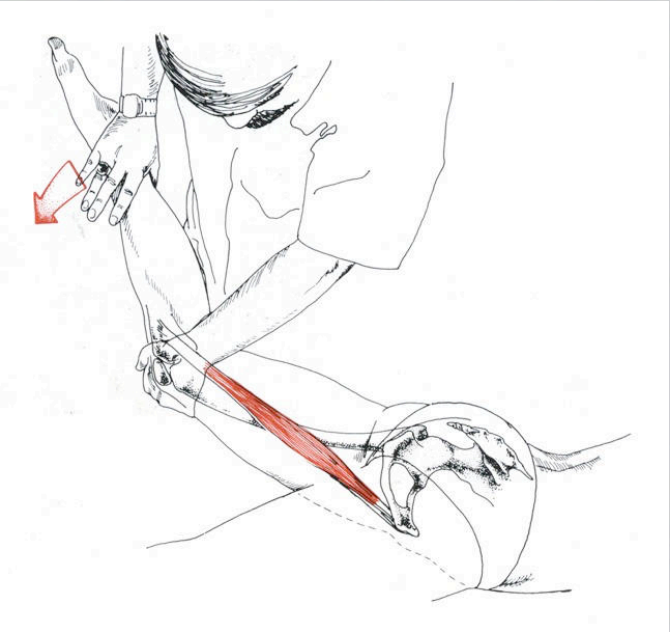
Sartorius

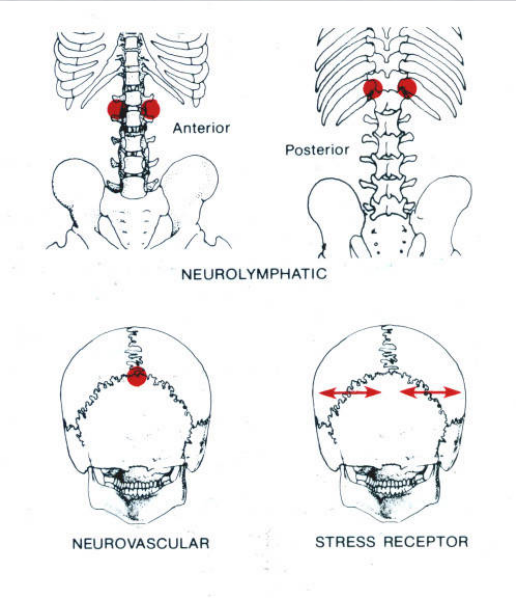




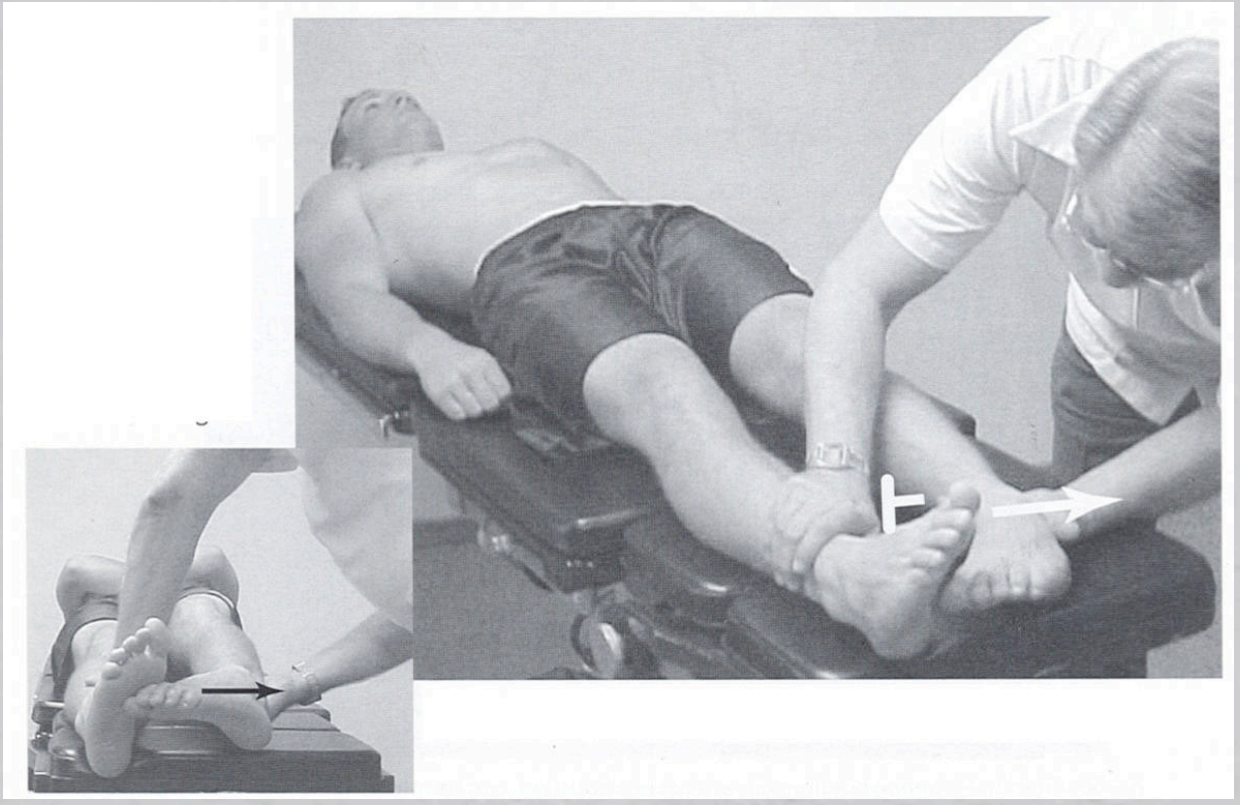

Anterior
Posterior
NEUROLYMPHATIC
NEUROVASCULAR
STRESS RECEPTOR

Gracilis

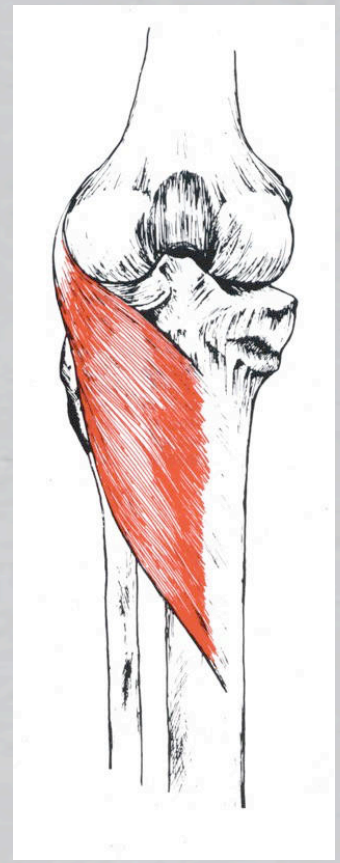


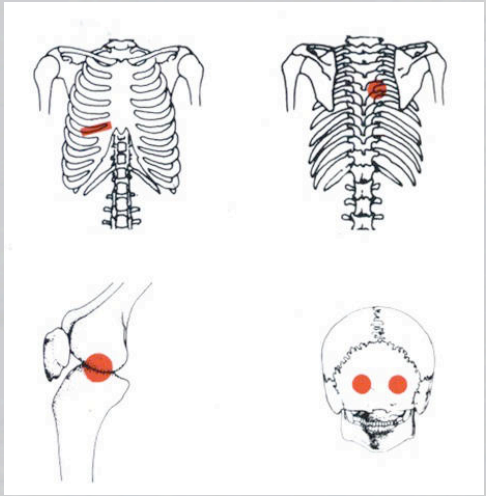

Anterior
Posterior
NEUROLYMPHATIC
NEUROVASCULAR
STRESS RECEPTOR

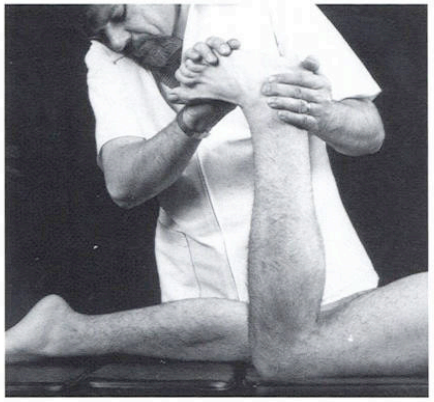
Gracilis Alternative Test



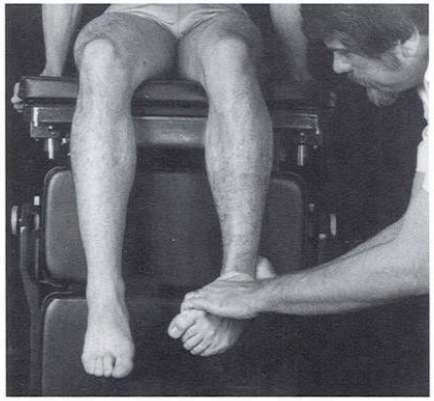
Popliteus







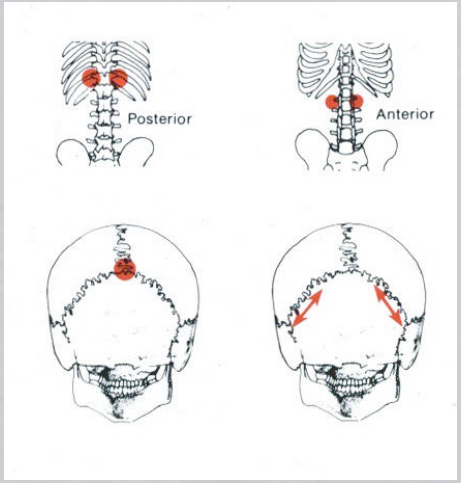
. Examiner observes for tibial tubercle rotation.

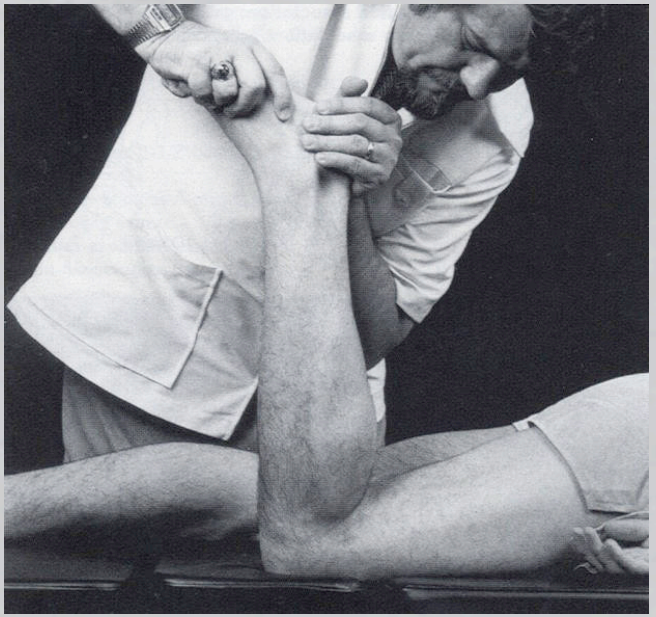


Seated test with observation for tibial rotation.

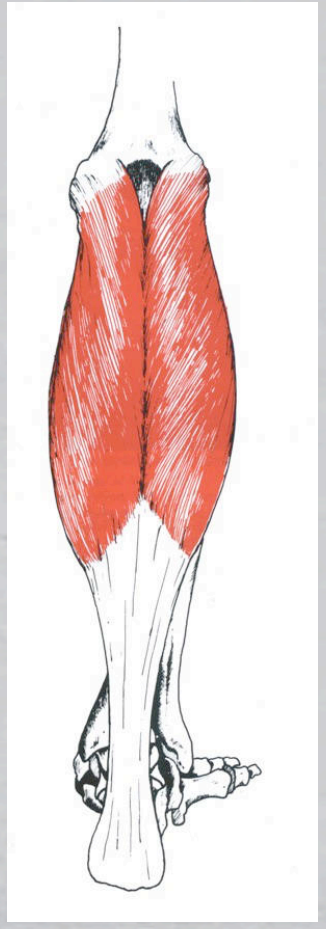
Soleus

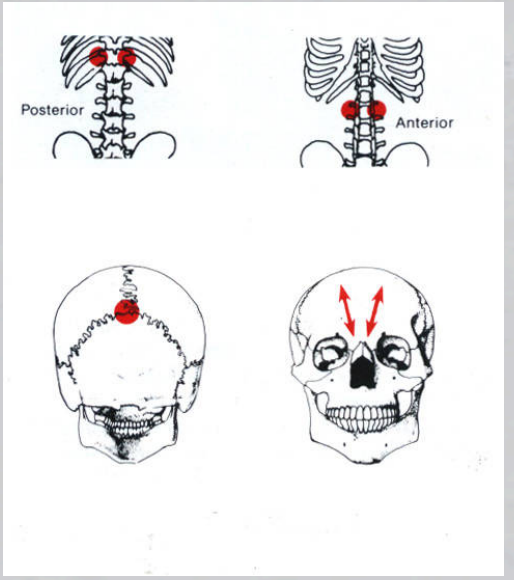


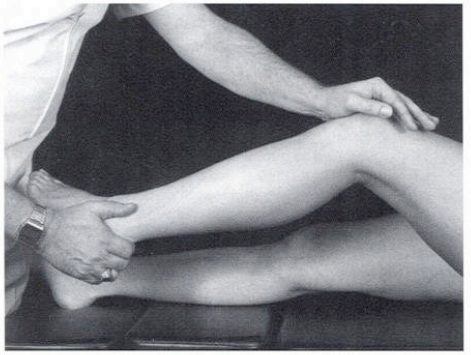




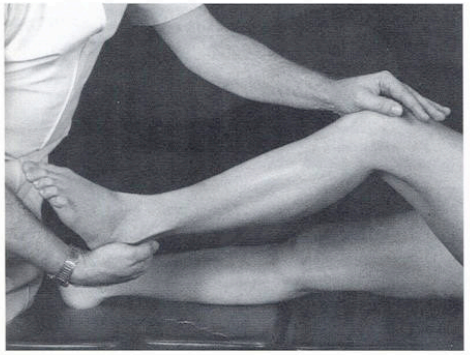
Gastrocnemius





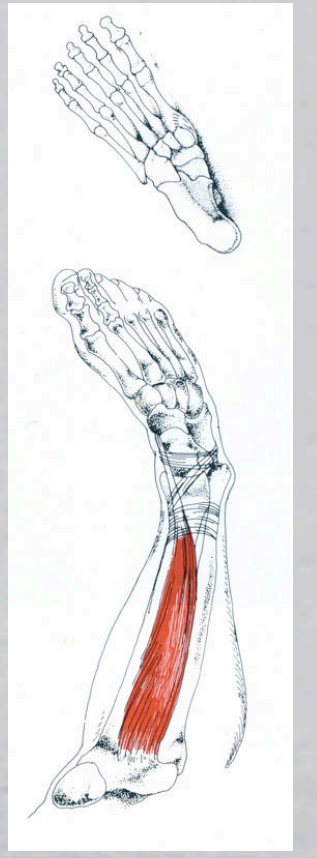


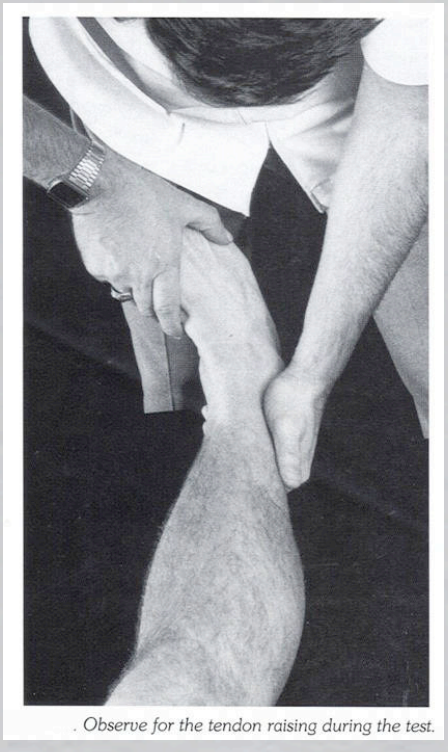
Internal leg rotation for medial gastrocnemius test.



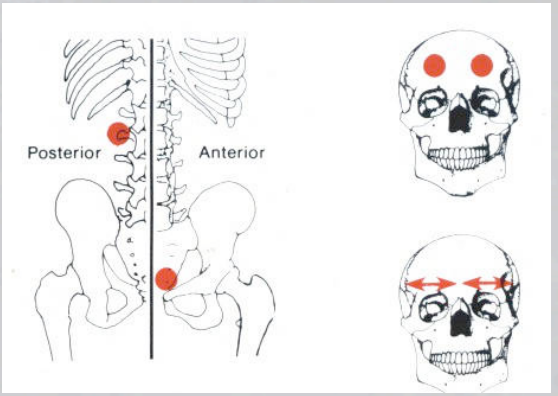
External leg rotation for lateral gastrocnemius test.

Tibialis Anterior

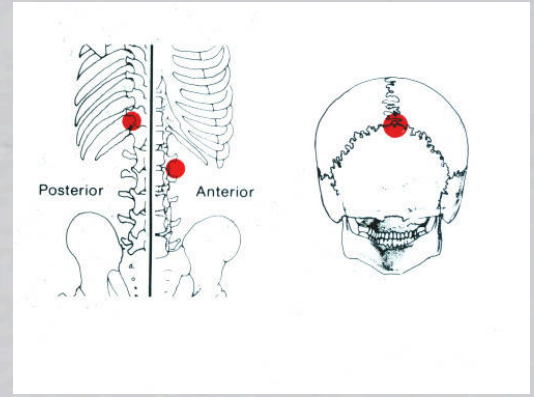


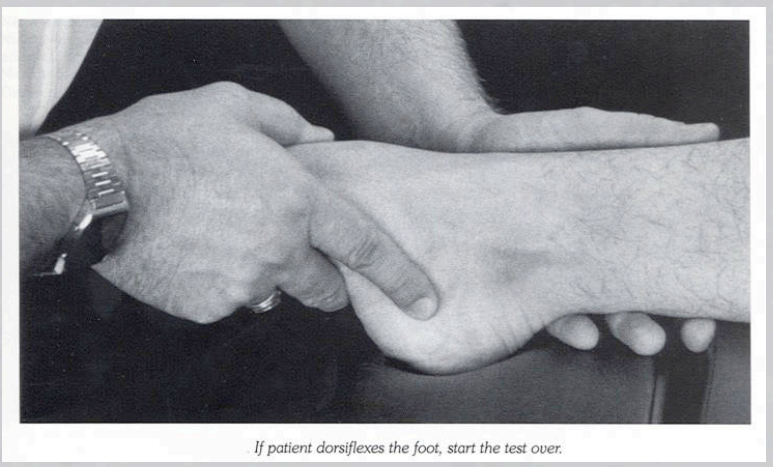


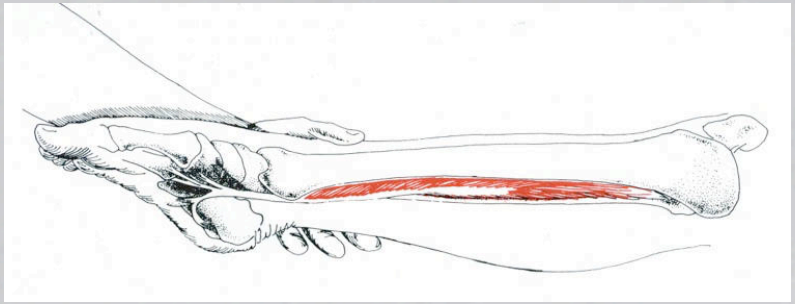
. Observe for the tendon raising during the test.



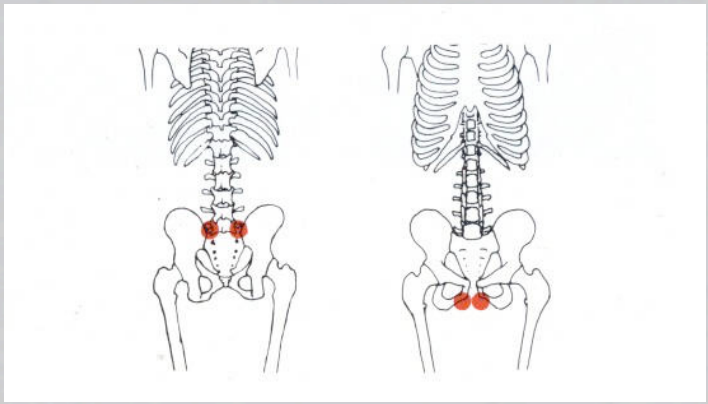
Tibialis Posterior

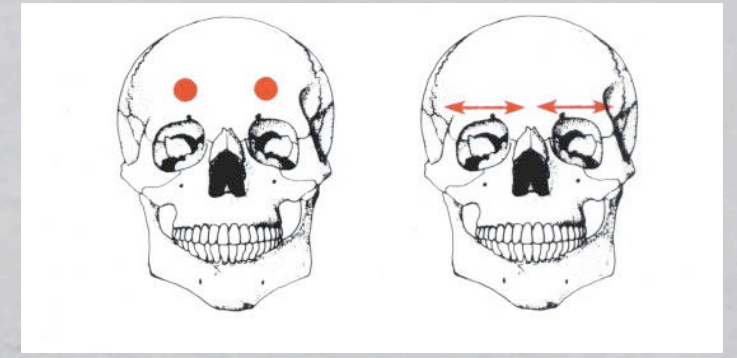


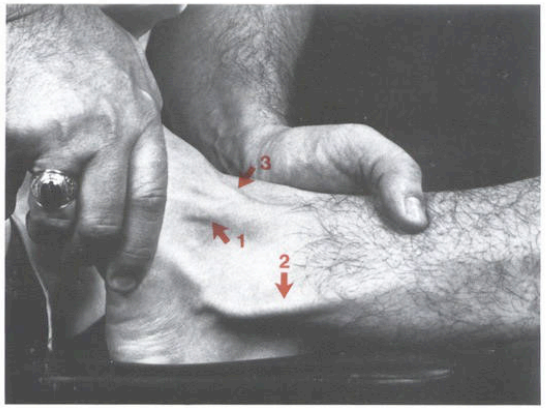

If patient dorsiflexes the foot, start the test over.

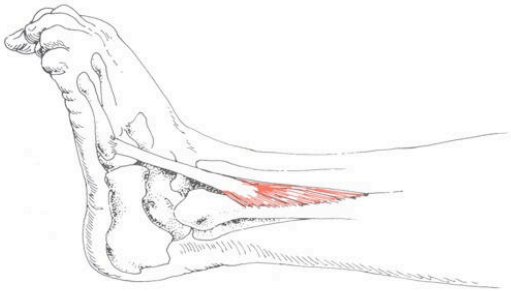


Peroneus Tertitus

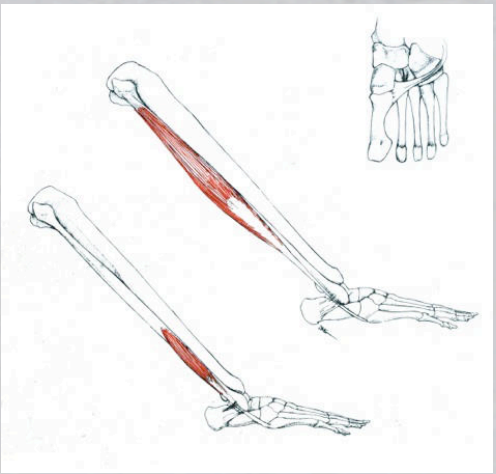


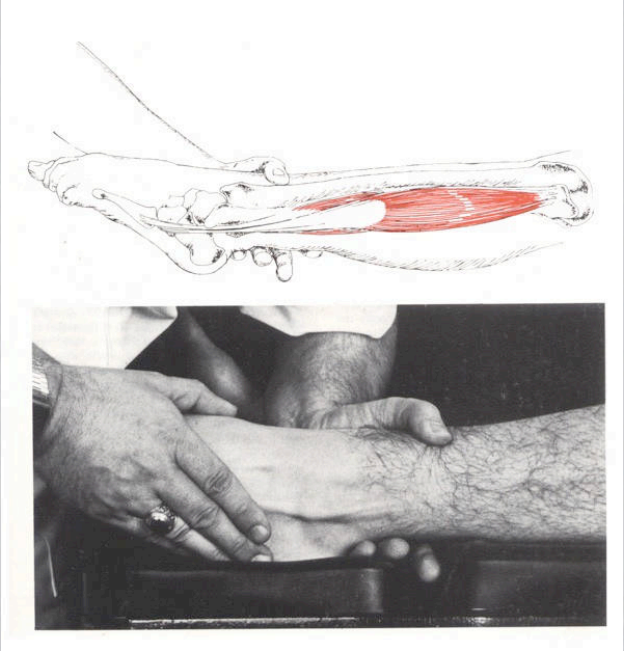


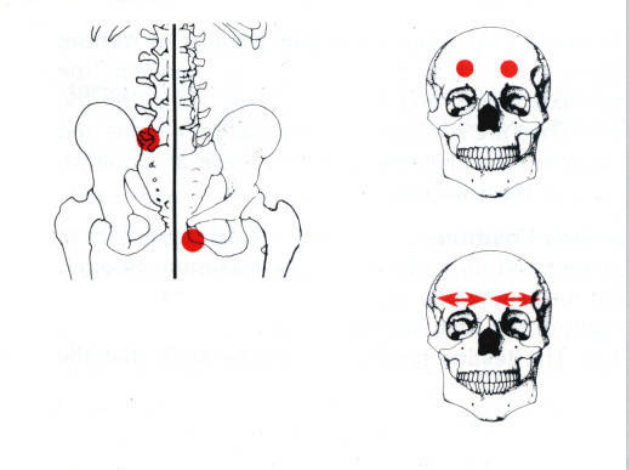


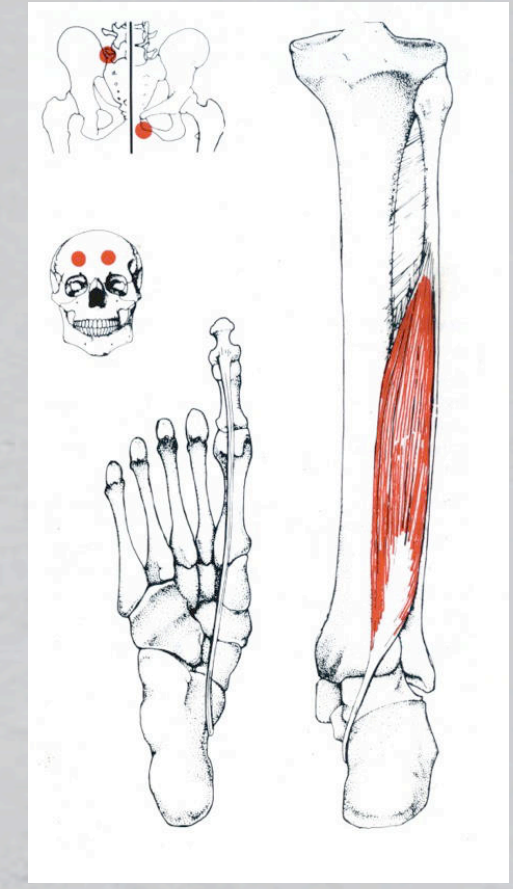


Peroneus Longus and Brevis

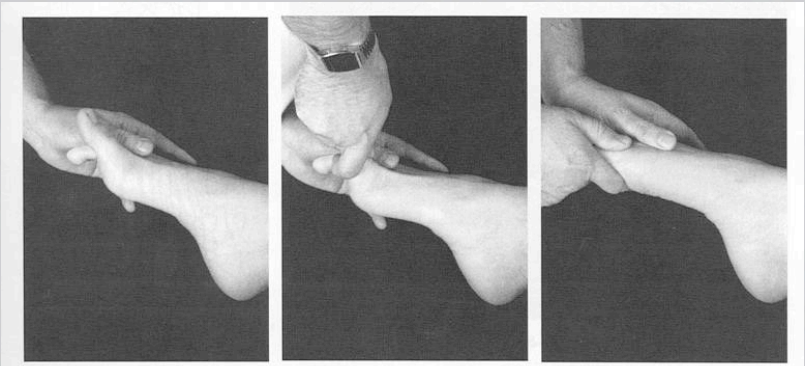








Flexor Hallucis Longus

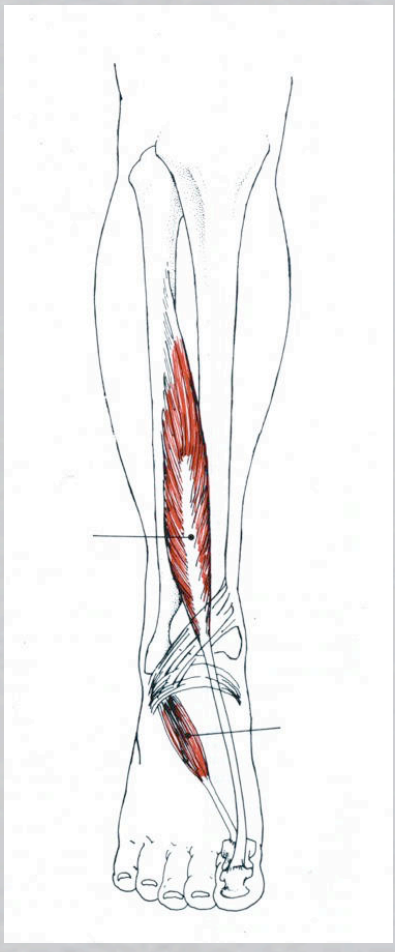


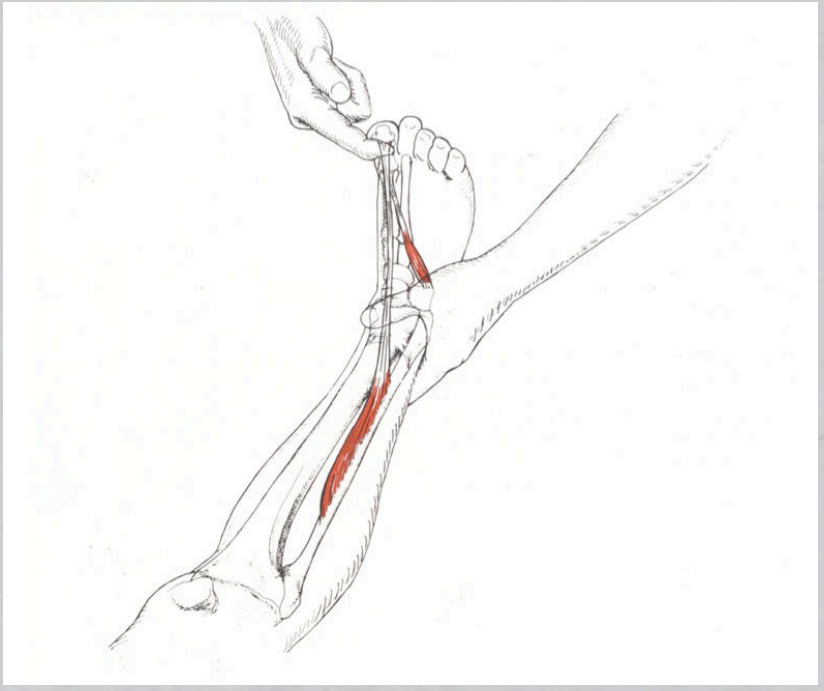
First step — flex 2nd-5th toes.

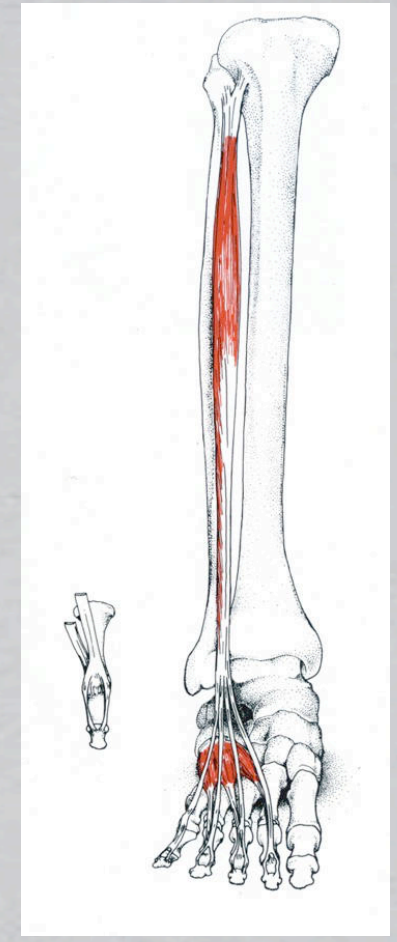
Second step — extend great toe and hold extension of interphalangeal articulation.

Third step — starting position is with flexion at the metatarsophalangeal articulation.

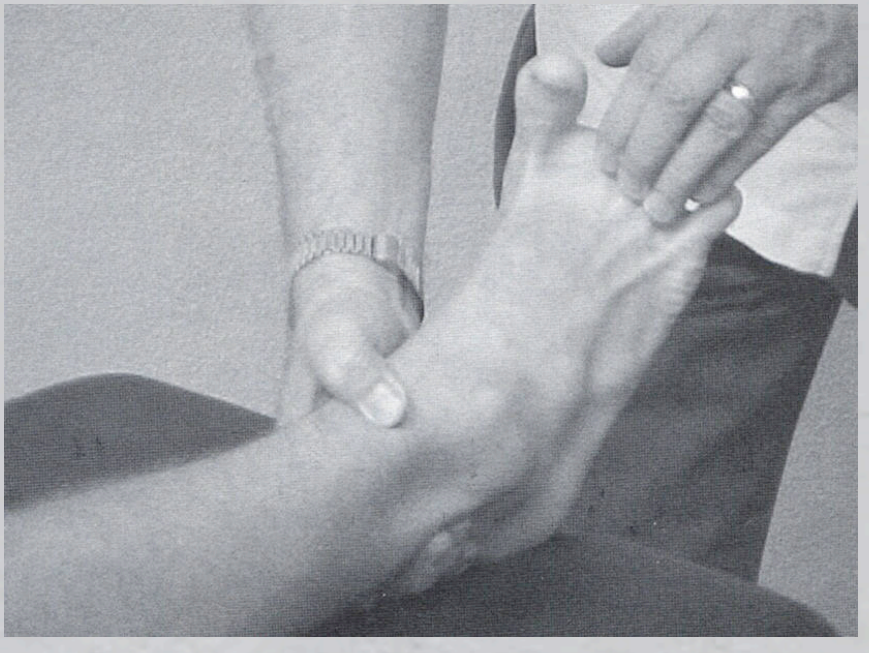
Extensor Hallucis Longus and Brevis







Extensor Digitorum Longus and Brevis



Evaluating and treating range of motion impairments of the proximal and distal fibular joints.



Proximal fibula must be more mobile than the distal end

Distal A-P glide is joint play



Fibula Anatomy

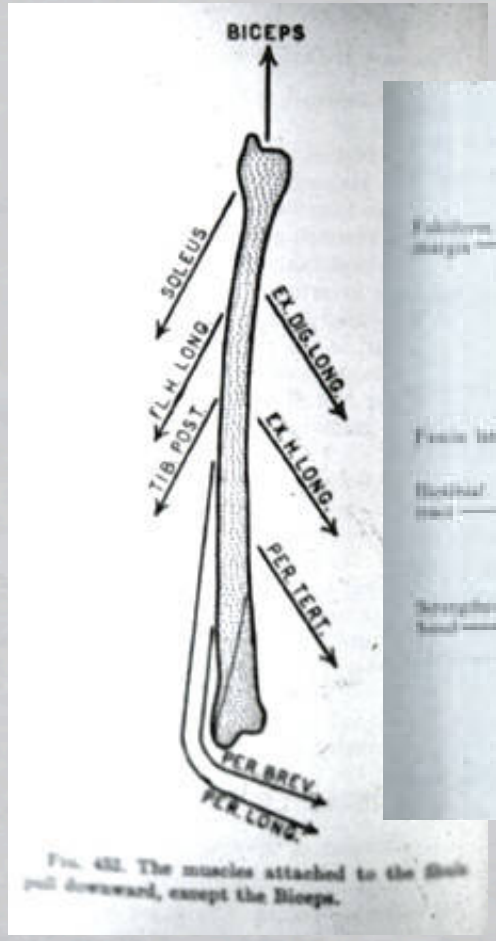
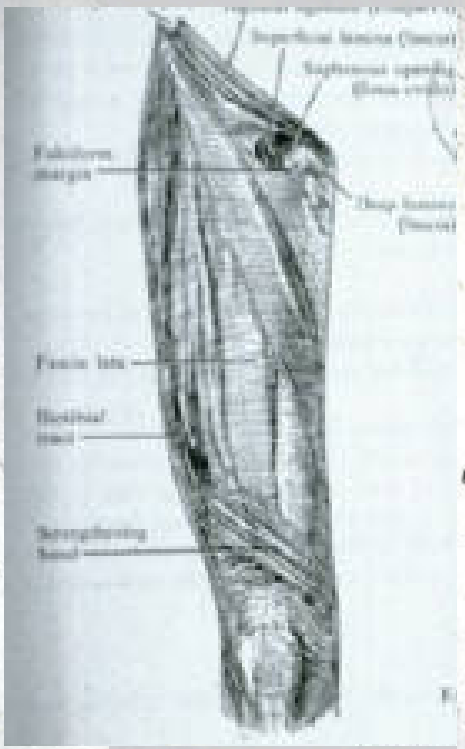
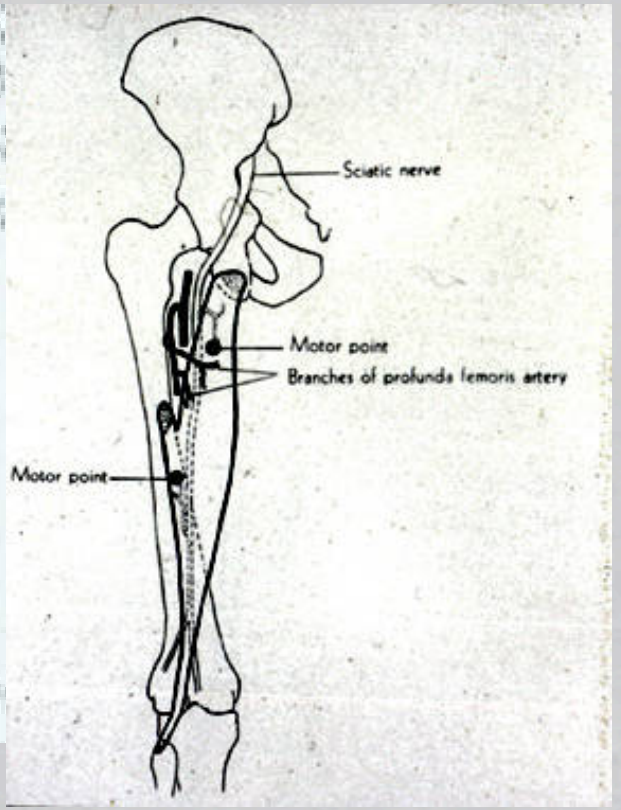
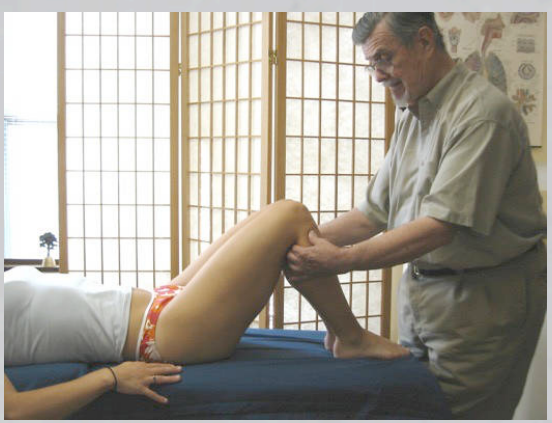


FIG. 432. The muscles attached to the fibula pull downward, except the Biceps.





Proximal Fibula Drawer Test









Check Drawer Test Visually





Proximal Fibula Treatment









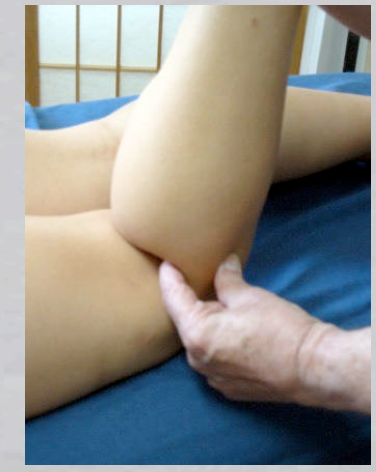
Treat Anterior or Posterior Fib.

- Patient prone
- Affected knee flexed
- Foot dorsum rests on operator's shoulder
- Operator gently holds head of fibula between index and thumb to monitor and guide it.
- Plantar flex ankle passively until head of fibula moves
- Passively adduct heel until fibula moves
- Passively rotate tibia to move fibula head to its glide barrier.
- Say: "Press your toenails into my shoulder." "Relax." (3X)
- Fine-tune barrier position

Treat Proximal Fibula Restriction











Muscle Energy Treatment: Posterior Fibular Head



Muscle Energy Treatment: Anterior Fibular Head

Test tibial rotation barriers at knee
Direct or indirect release



With hip in external rotation, find the exact point of balance between foot, knee, and hip



Dorsiflex foot/ankle against your hip while externally rotating knee, hip, and talus



Final position from previous direct myofascial release. Maintain external rotation of talus until knee has fully extended, then rotate internally with plantar flexion.



Seated release of posterior knee fascias
Hamstrings, popliteus, gastrocnemius heads



Nerve/fascia releases of sciatic in popliteal space and between calf bellies



Direct myofascial release of adductor
***Important for knee and hip. Patient slowly flexes/extends knee and thigh**



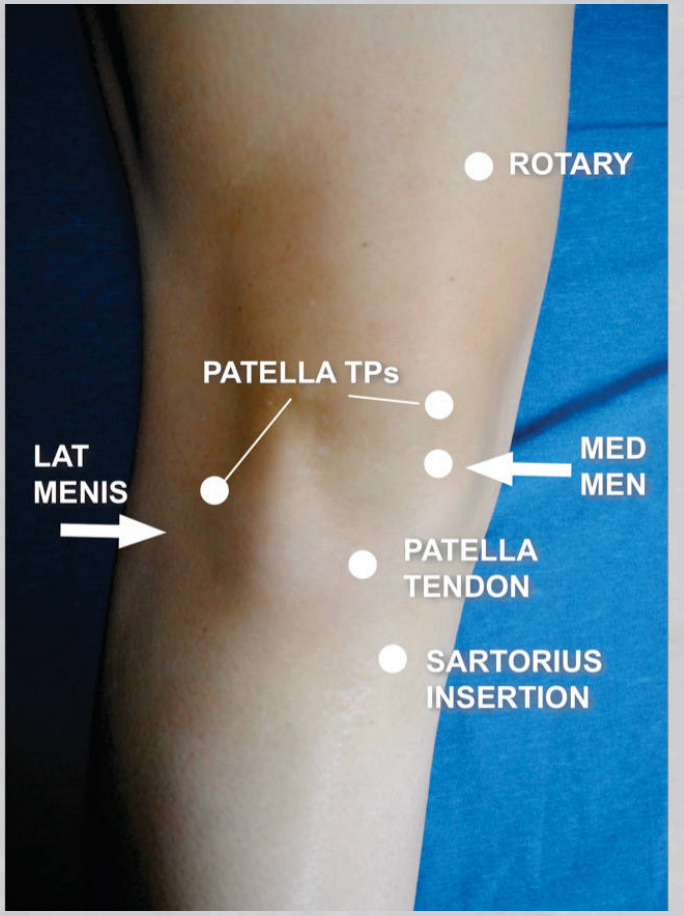
Direct myofascial release of lateral thigh
Connections: TFL, ITB, Vastus Lateralis

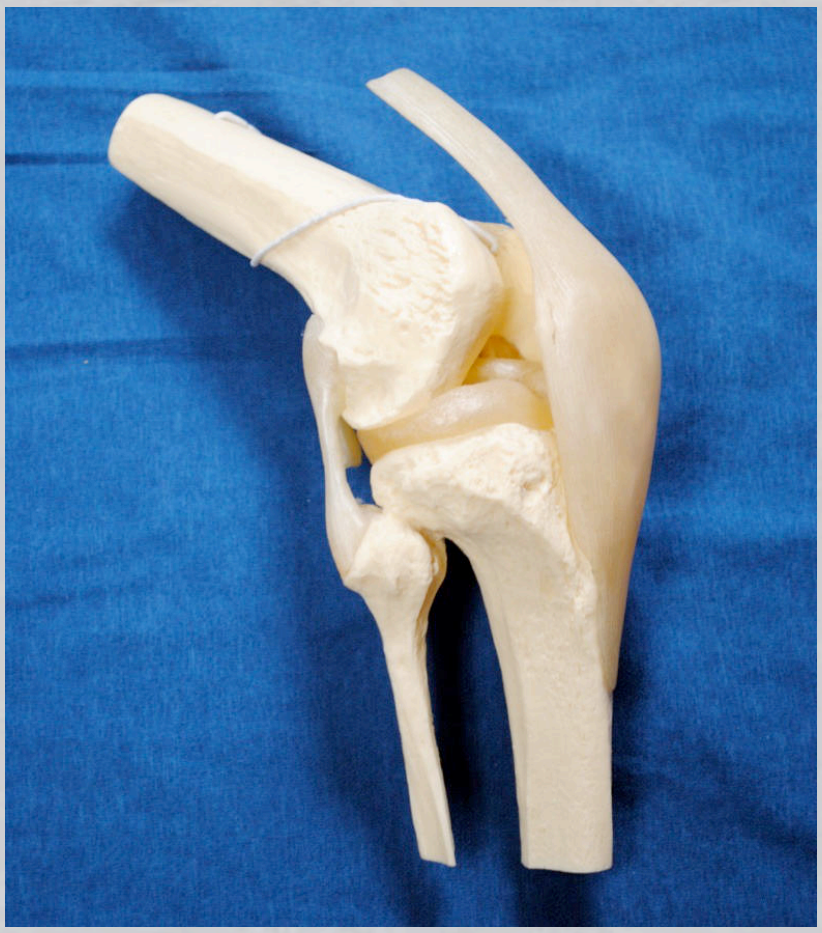


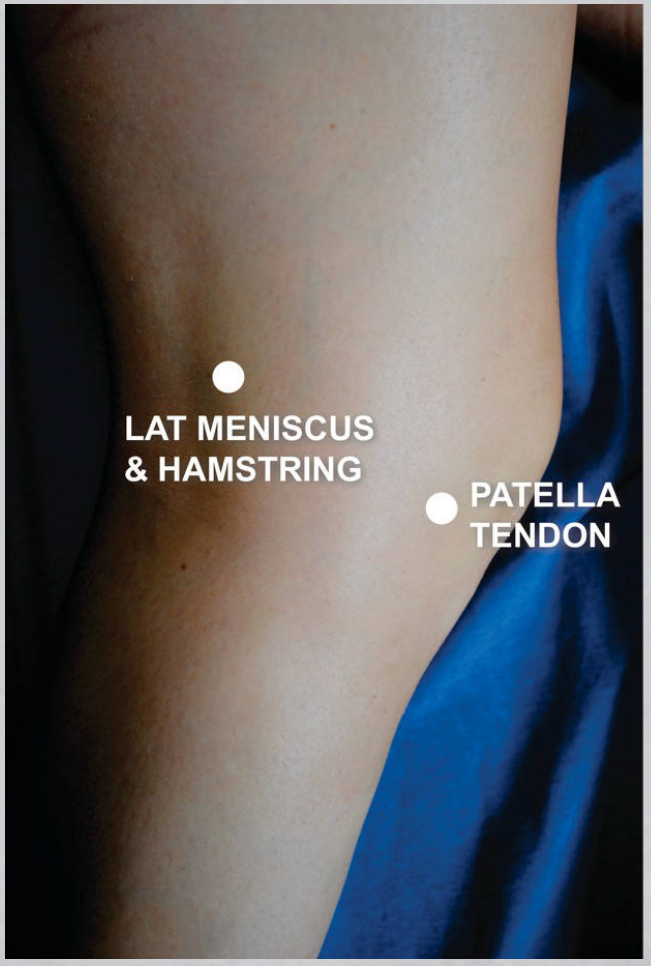
Direct myofascial release of anterior compartment. Tibialis Anterior, Extensor hallicus, extensor digitorum muscles. Dorsiflex – plantar flex

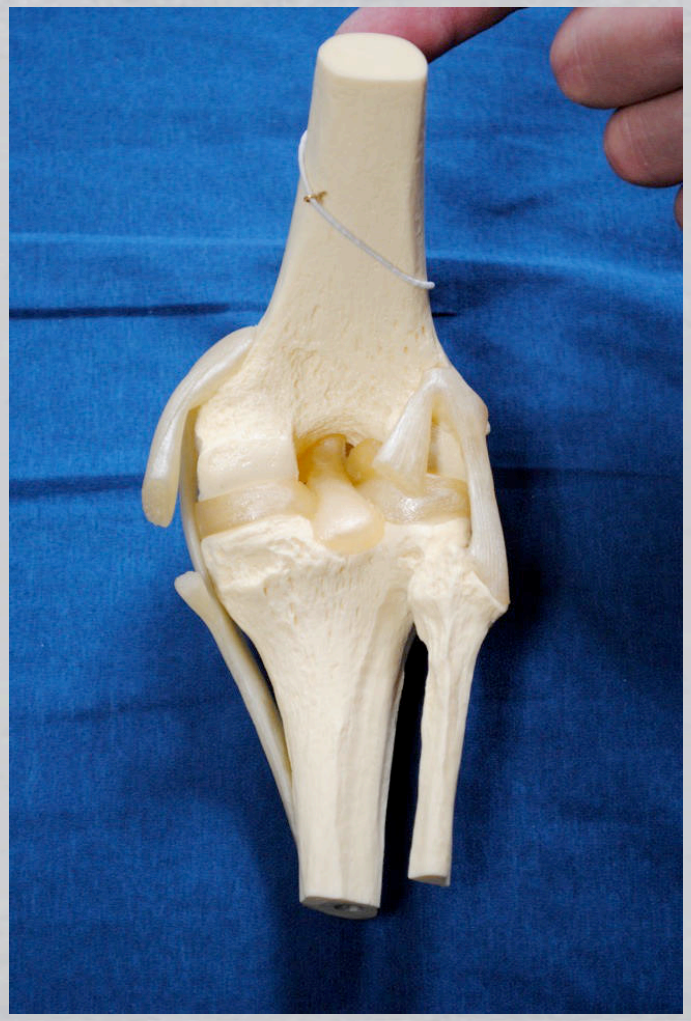


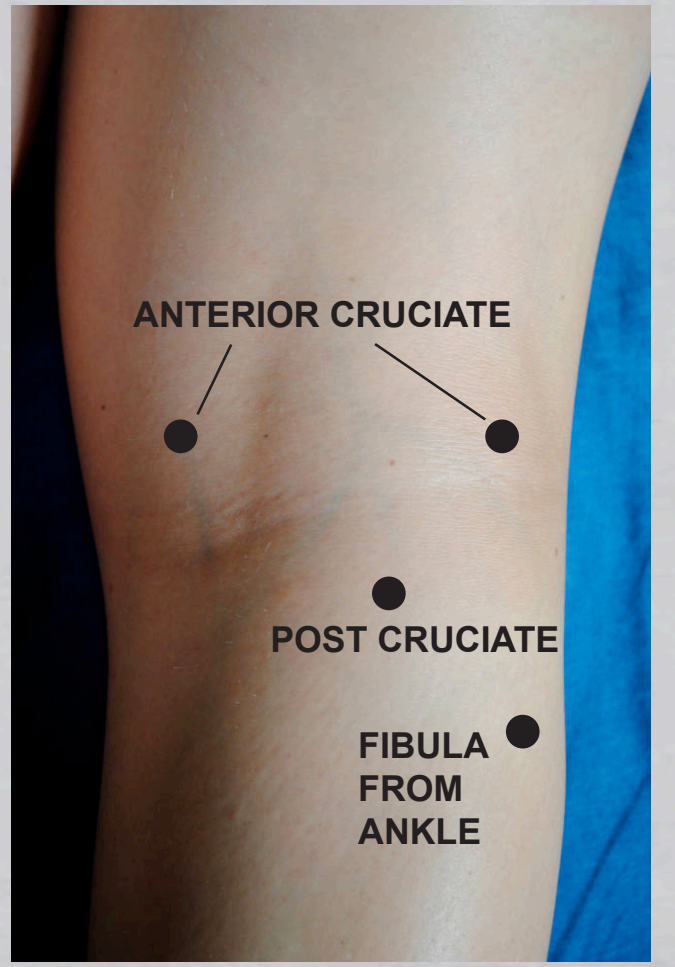



ROTARY
PATELLA TPs
LAT
MENIS
MED
MEN
PATELLA
TENDON
SARTORIUS
INSERTION

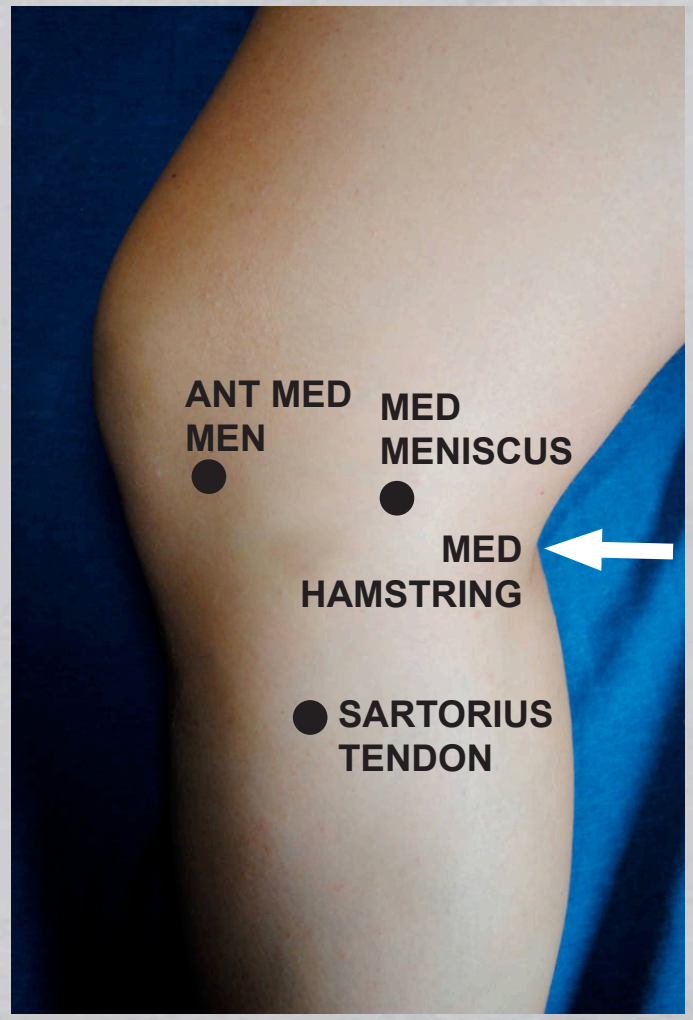


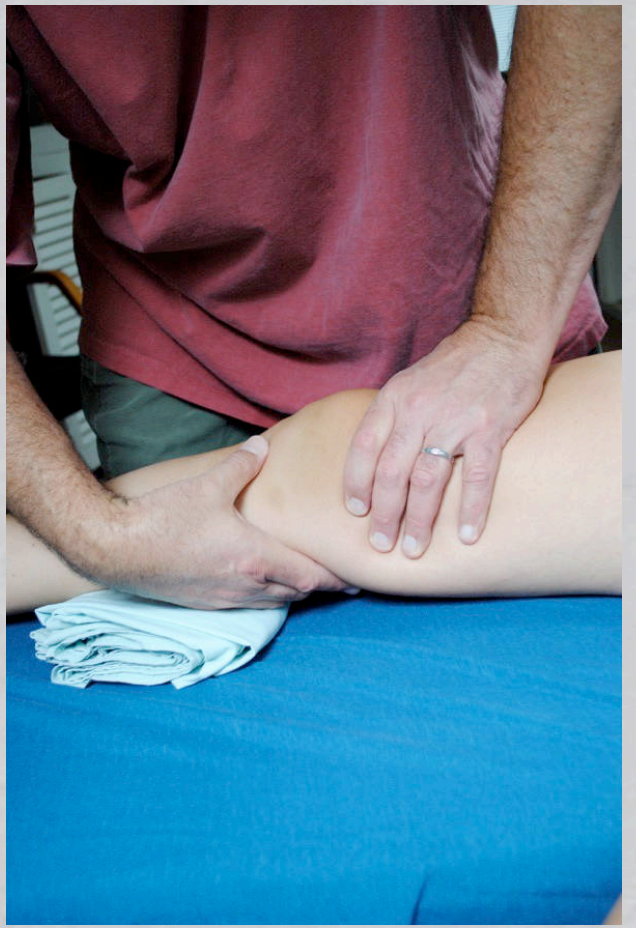

LAT MENISCUS
& HAMSTRING
PATELLA
TENDON




ANTERIOR CRUCIATE
POST CRUCIATE
FIBULA
FROM
ANKLE




ANT MED
MEN
MED
MENISCUS
MED
HAMSTRING
SARTORIUS
TENDON



<u>Posterior Cruciate Ligament</u> (common),
Tenderpoint: Popliteal Space;
Tx: Apply strong force to femur towards table

<u>Anterior Cruciate Ligament</u>,
Tenderpoint: Hamstring tendons at level of widest part of popliteal space



<u>Medial Meniscus</u> (common)
Tenderpoint: Inner line of leg at area of MCL
Tx: Int. rotation of tibia at 60 degrees flexion off table



Medial Meniscus

Tenderpoint: Attachment of medial hamstring

Tx: Most force is rotation of tibia



Lateral Meniscus or Hamstring

Tenderpoint: Lateral meniscus or near lateral hamstring

Tx: Abduction and external rotation of tibia with knee bent



Rotated Knee

Tenderpoint: 1 inch superior to medial condyle

Tx: 90 degrees of flexion and rotation of flexed leg on femur

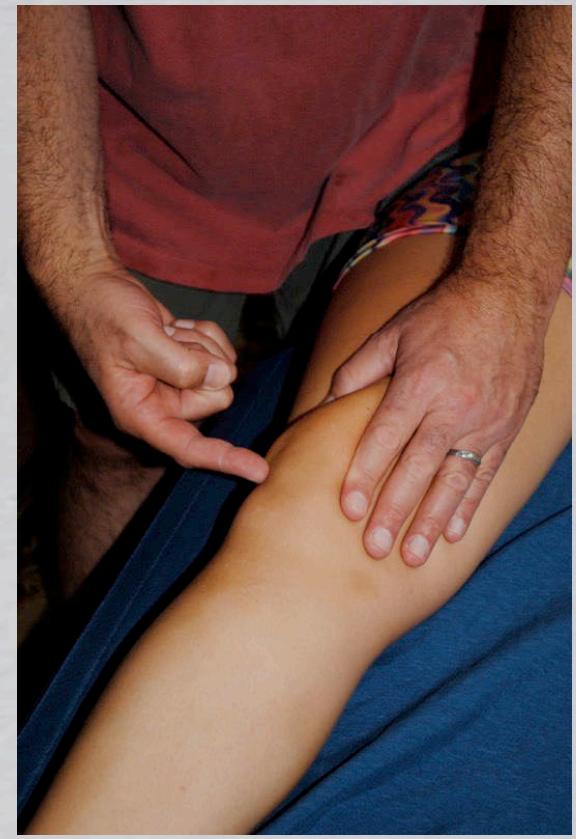


<u>Knee Extender</u>

Tenderpoint: Inferior to patella on patella ligament

Tx: Hyperextension of knee. Rotation as needed *Patient has pain with squat or hyperextension



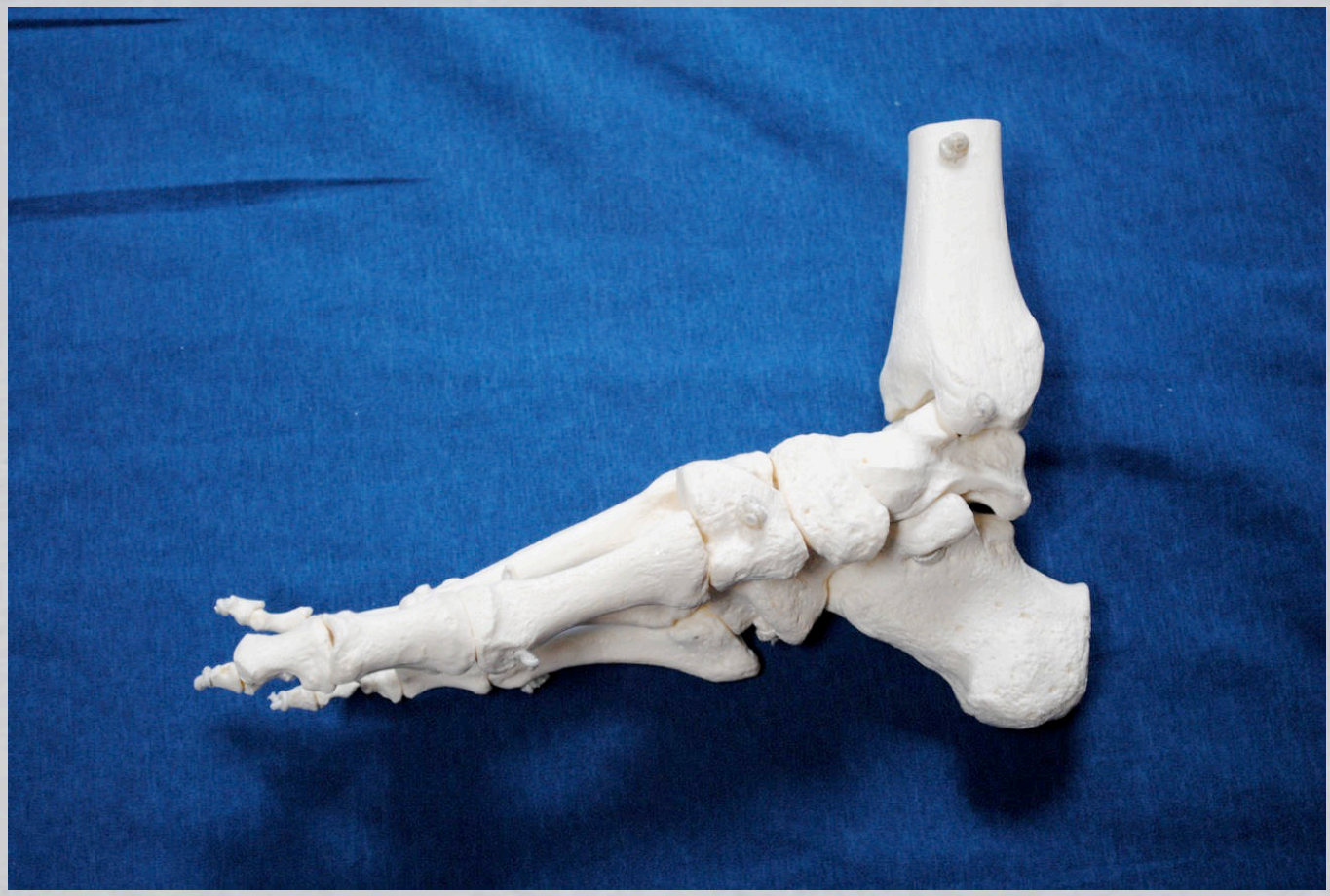


Patella

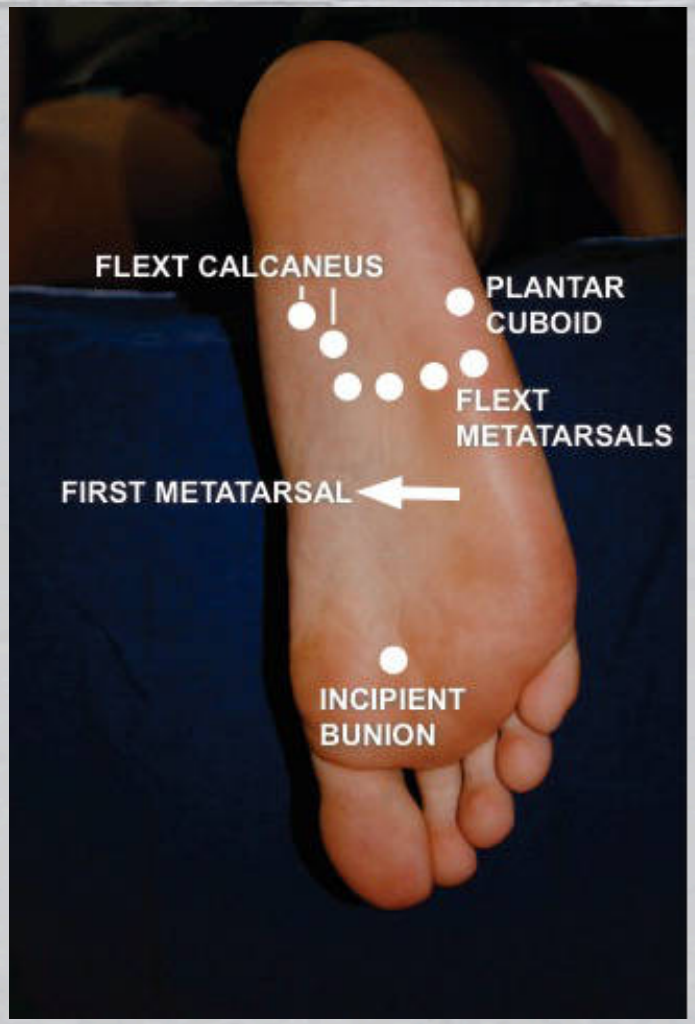
Tenderpoint: 1.5 inches above patella

Tx: Gentle pressure from side opposite patella towards patella

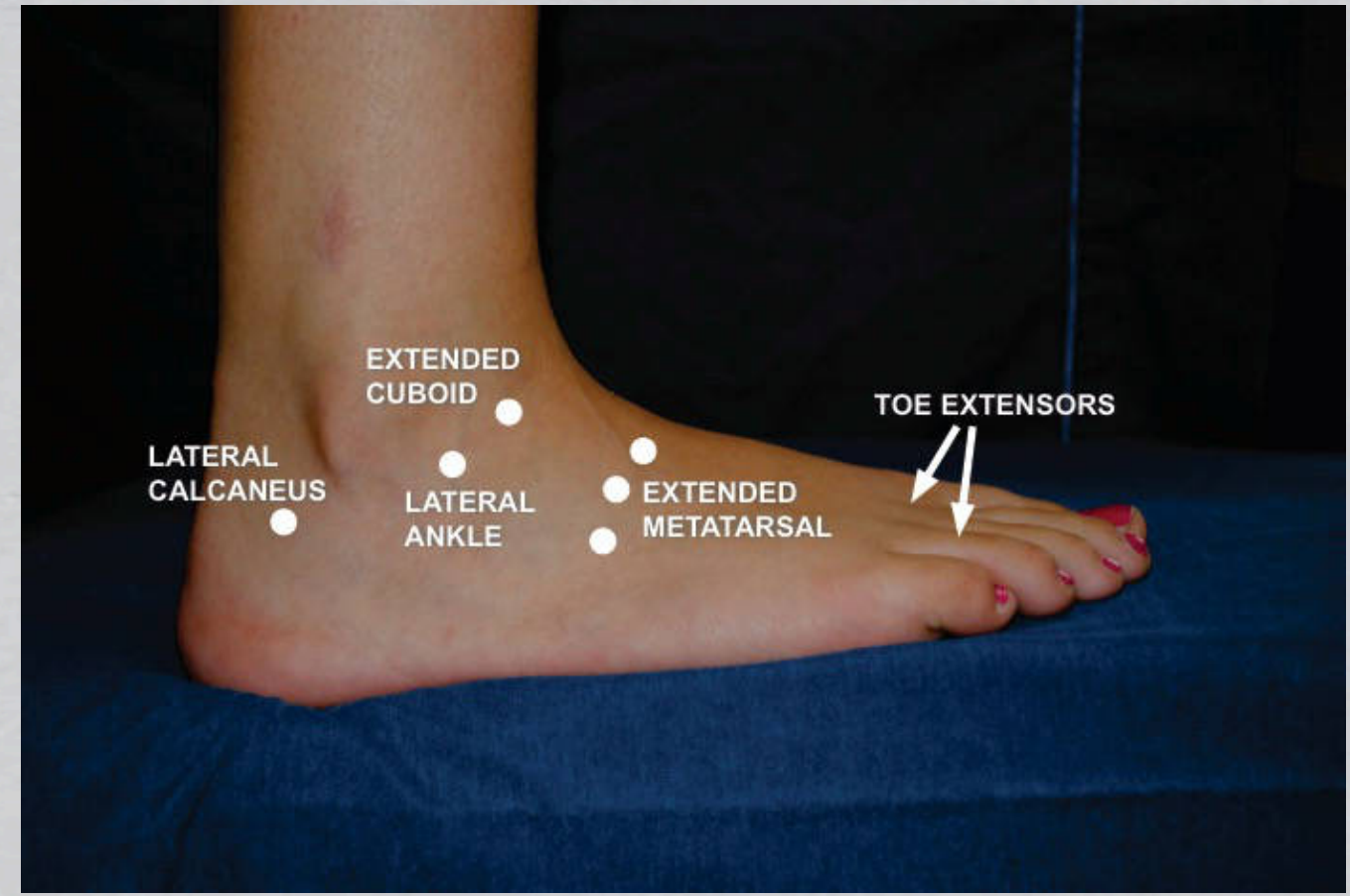


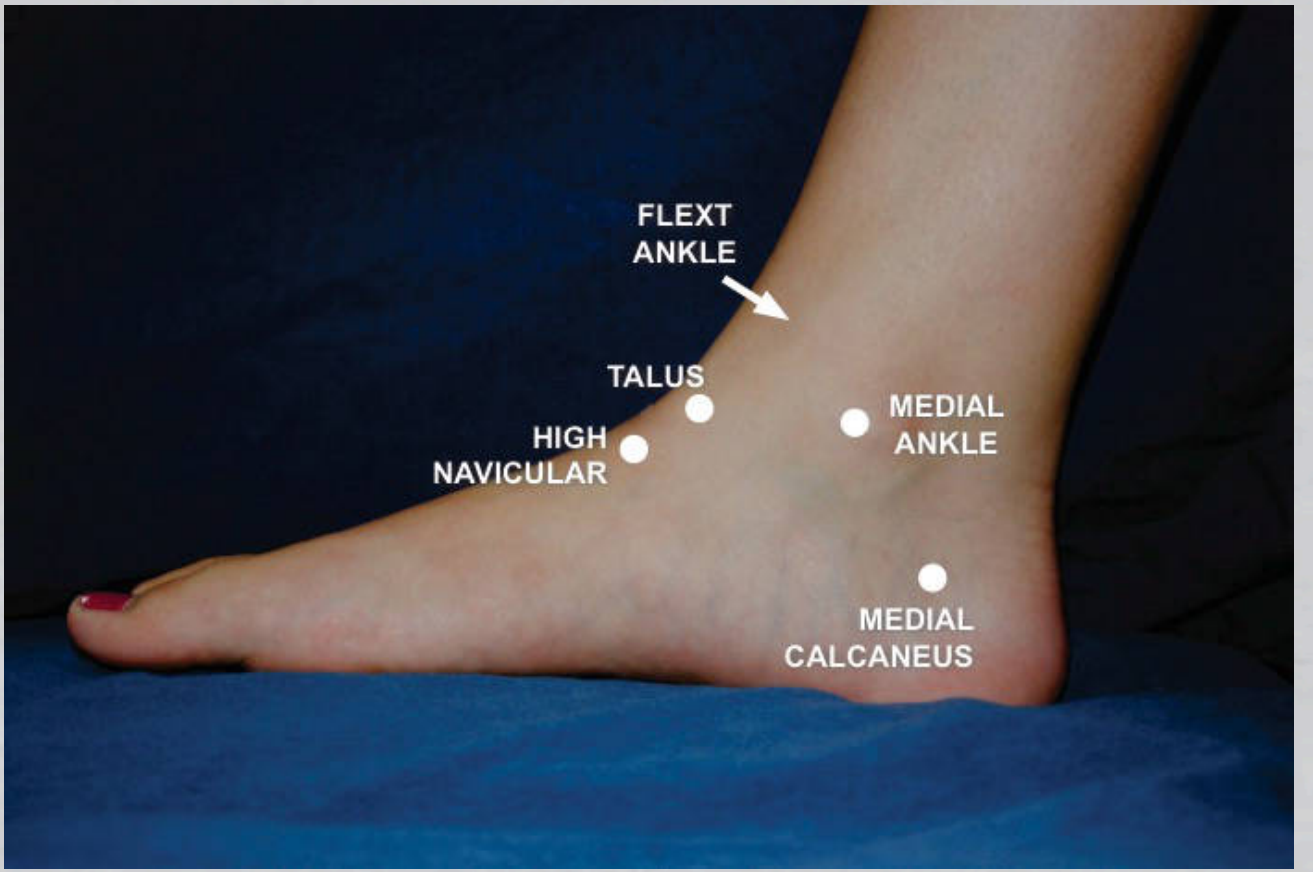


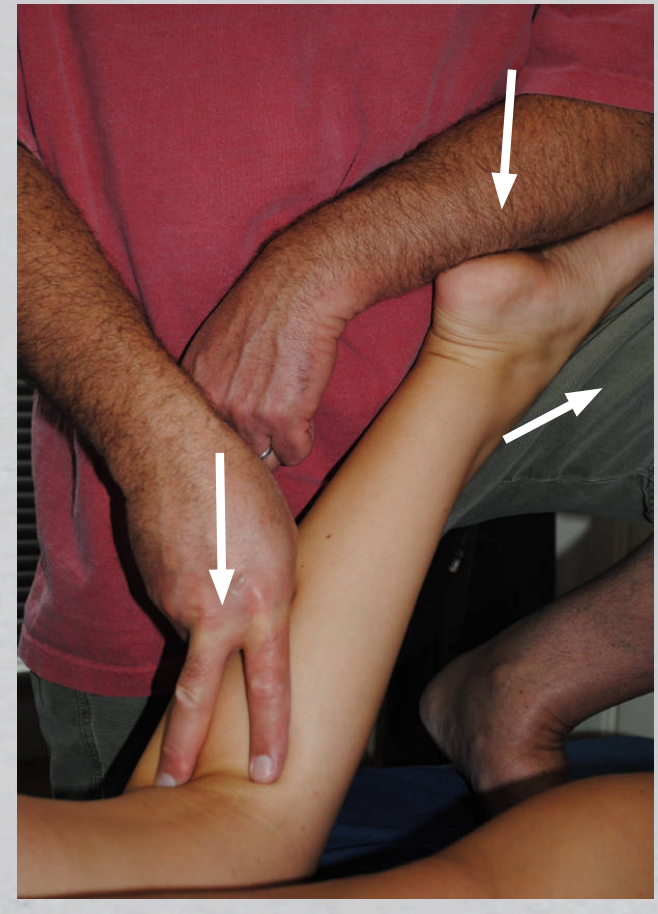



FLEXT CALCANEUS
PLANTAR CUBOID
FLEXT METATARSALS
FIRST METATARSAL
INCIPIENT BUNION

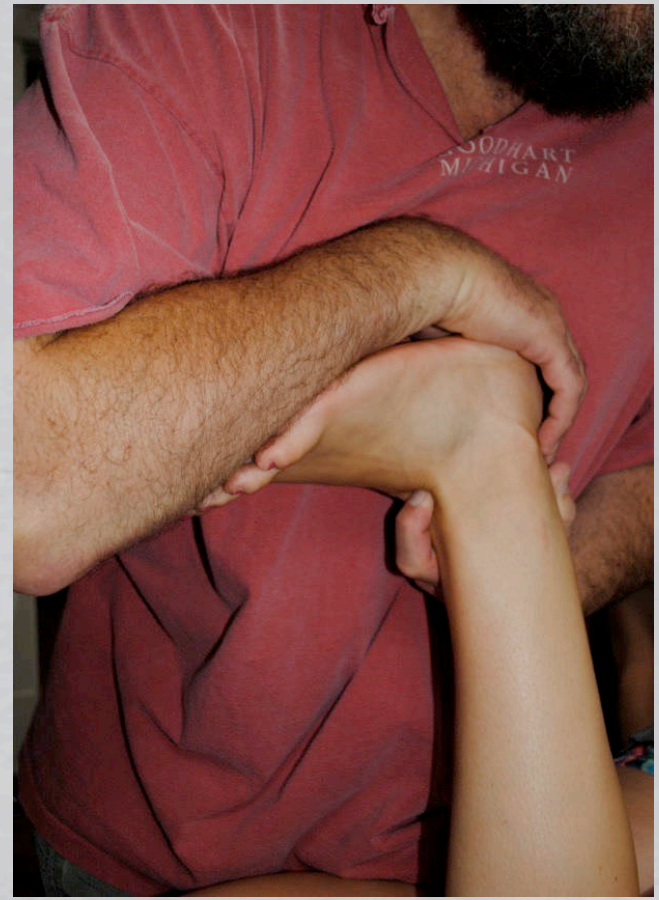



EXTENDED
CUBOID
LATERAL
CALCANEUS
LATERAL
ANKLE
EXTENDED
METATARSAL
TOE EXTENSORS


FLEXT
ANKLE
TALUS
HIGH
NAVICULAR
MEDIAL
ANKLE
MEDIAL
CALCANEUS



<u>Extension Ankle</u> (“apparent foot drop”)
Tenderpoint: Heads of gastrocnemius (medial)
Tx: Extend ankle with proximal instep *Avoid straining metatarsals!



Flexion Ankle

Tenderpoint: Deep in depression of front ankle medial to big extensor tendon

Tx: Strong ankle flexion with rotation as needed

Medial Ankle

Tenderpoint: Just below medial malleolus

Tx: Inversion of ankle/foot Towel under distal tibia



Lateral Ankle

Tenderpoint: Just below lateral malleolus/3cm anterior (common)

Tx: Knee bent, lying on affected side

Apply very strong force of eversion from 3cm below medial malleolus



<u>Extended Cuboid</u>
Tenderpoint:
Slightly anterior to lateral ankle
Tx: Dorsiflex lateral part of foot into tenderpoint



<u>Flexed Calcaneus</u>
("Plantar Fascitis")
Tenderpoint:
Attachment point of plantar fascia anterior/medial aspect of inferior calcaneus
Tx: Dorsiflex Push heel toward front of foot with ankle in extension ankle position(previous)



First Metatarsal

Tenderpoint: Deep between 1st and 2nd metatarsals at midshaft level of plantar surface

Tx: Dorsiflex Turn 1st metatarsal (NOT Toe!) in eversion. Fine tune rotation



Incipient Bunion

Tenderpoint: Inferior to the lateral sesamoid between metatarsals 1 and 2

Tx: Sidebend great toe lateral. Rotate plantar direction towards tenderpoint



Seated control position for ankle mortise.



Motion testing of foot joints for barriers can use direct, indirect, muscle energy, etc.



Seated control of rear foot to front foot can test sub-talar joint by stabilizing talus.



Preparing for cuneiform manipulation.



Thrust of superior cuneiform
Stabilize the lower extremity into the table before long axis traction



Controlling the MTP Joint for release
Check rotation, traction/compression barriers



Nerve/fascia release of sciatic from Achilles to plantar branches



Ankle mortise release patient prone
Check: rotations, inversion, eversion



Myofascial release of midfoot and arch



Direct myofascial release of medial compartment. Tibialis posterior, shin splints. Dorsiflex – plantar flex



Direct myofascial release lateral compartment
Peroneus muscles, flexor hallicus, gastrocnemius
Move foot/ankle



Malleoli Spread Test





- Plantar flexed = narrow

Dorsiflexed = wider

Distal Fibular Drawer Test



- Anterior-posterior joint play should be less than 1 mm.
- It should be symmetrical
- Spread test confirms hypermobility
- Treat subluxation with hypomobility using “vise-grip” technique.

Vise-grip Technique





- Alternate active dorsiflexion and plantar flexion of ankle while maintaining corrective shear with heels of hands.
- Retest after treatment



Muscle Energy Treatment: Distal Fibula (Pump Ankle)

Dr. Watson: *Sherlock, remind me, what was your highest degree of education?*

Sherlock Holmes:

Elementary, my dear Watson.

With hip in external rotation, find the exact point of balance between foot, knee, and hip



Nerve/fascia releases of sciatic in popliteal space and between calf bellies

