

EXSTORE ELECTROACUPUNCTURE MOTOR POINTS

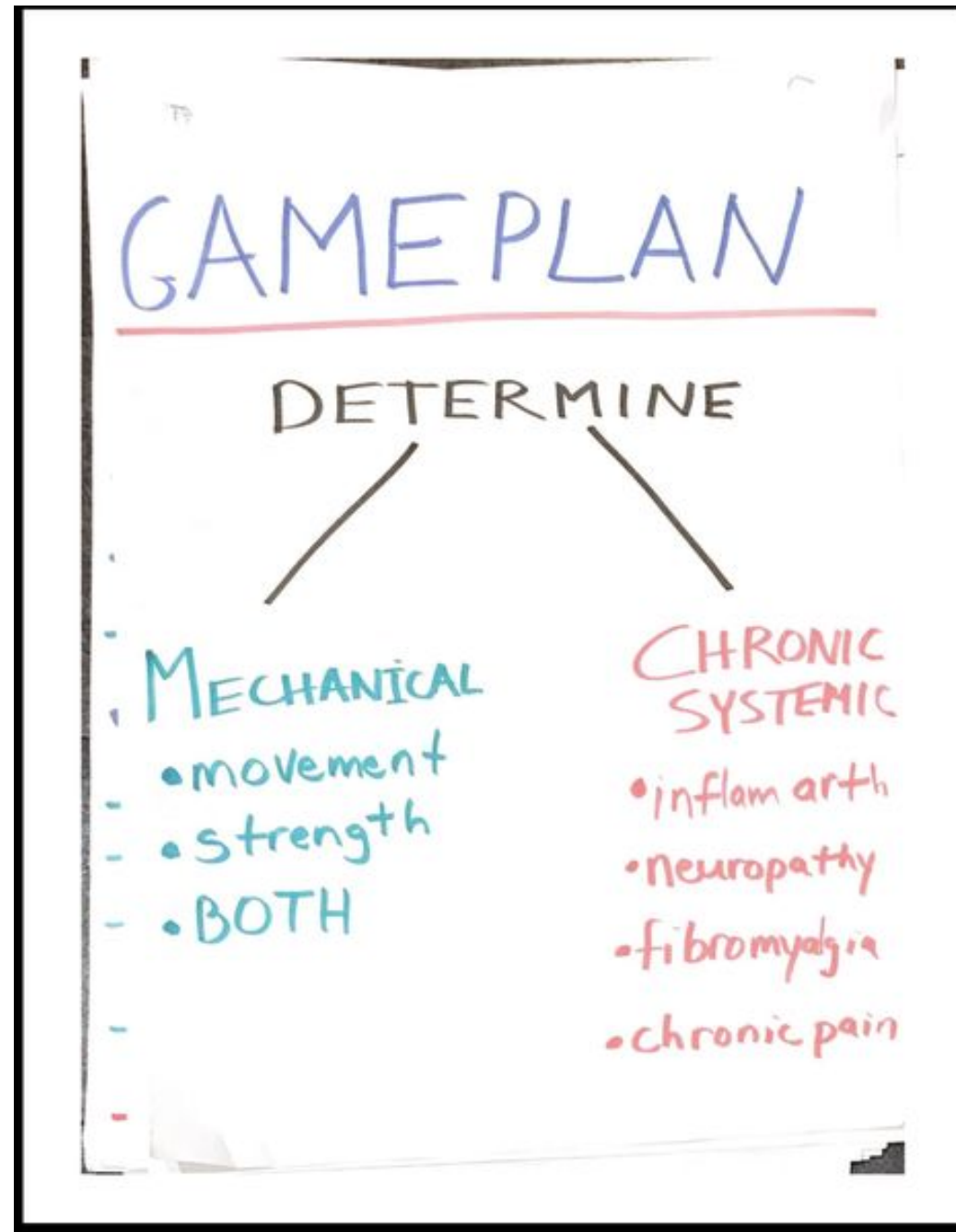
ALBANY, NY, USA

APRIL 14-16, 2023

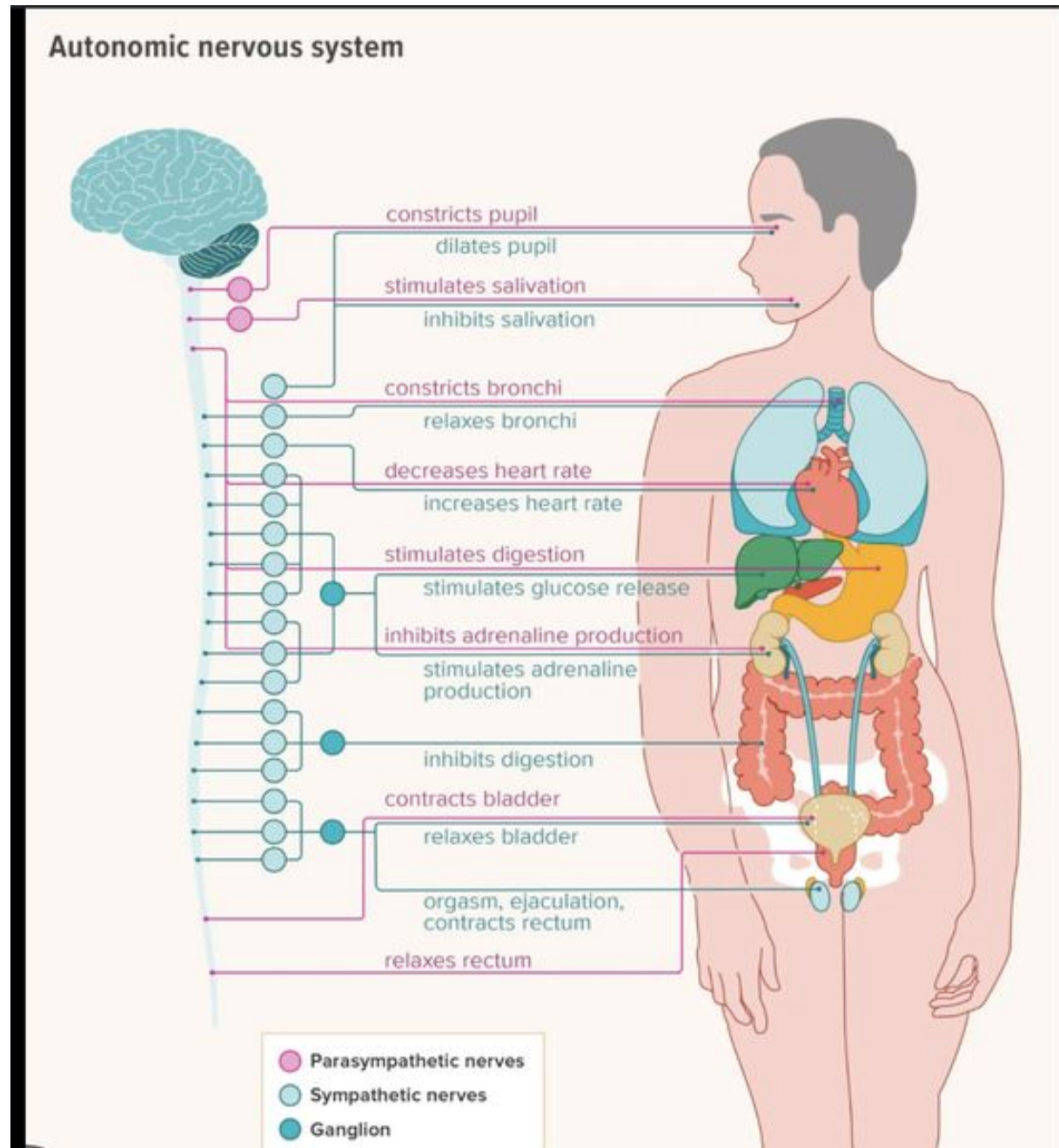
BY: DR. ANTHONY J. LOMBARDI

GAMEPLAN, TERMS, DEFINITIONS

CLASSIFICATION DETERMINES GAMEPLAN



PNS/SNS



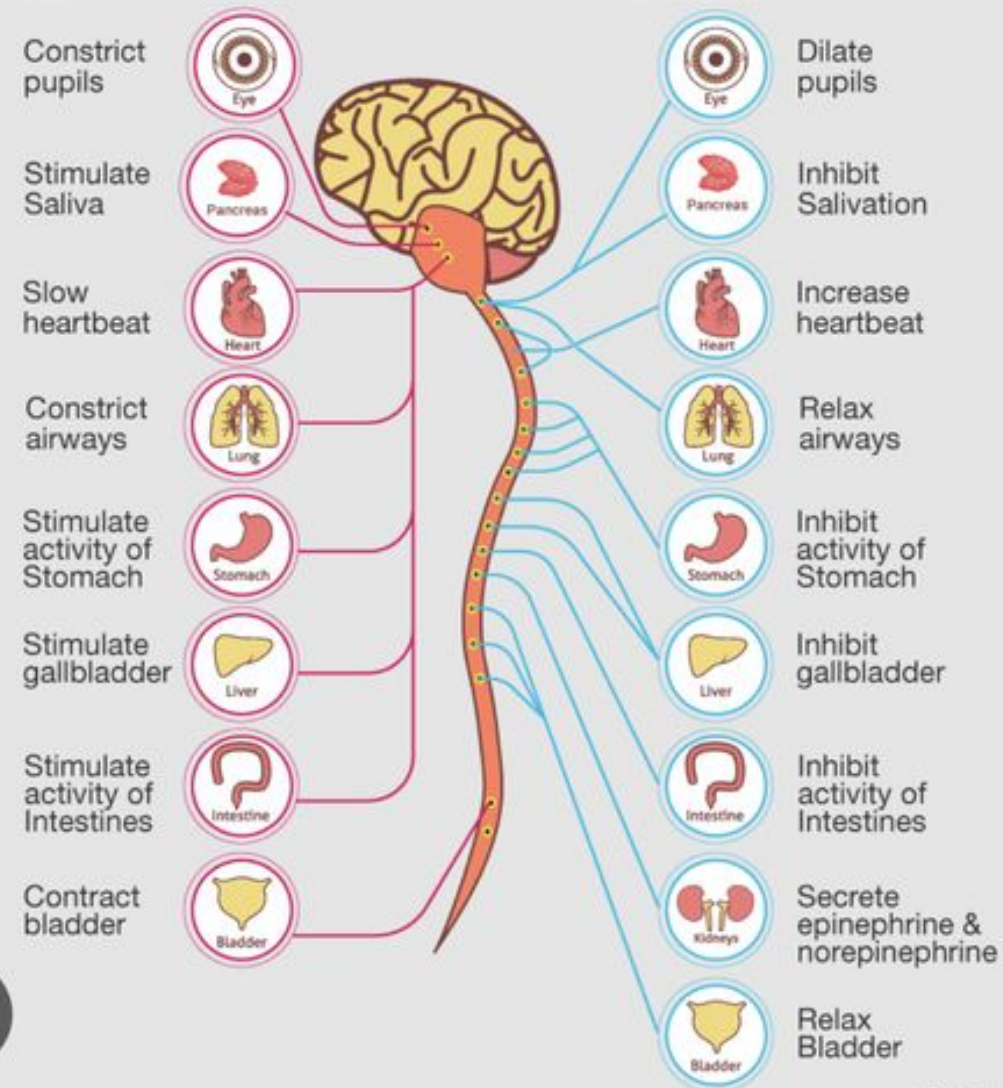
PNS/SNS

DIFFERENCE BETWEEN SYMPATHETIC AND PARASYMPATHETIC

PARASYMPATHETIC NERVES

Vs

SYMPATHETIC NERVES



DRIVERS OF SYMPATHETIC TONE

- CHRONIC SYSTEMIC ILLNESS
- CHRONIC STRESS
- PAIN

MECHANICAL VS CHRONIC SYSTEMIC INJURY

GAME PLAN

IF MECHANICAL

- correct asymmetries
- renovate soft tissue

IF CHRONIC Systemic

- provide autonomic
neuromodulatory
inputs

Nature of Pain(s)

• Sclerotoma |

bone
joint
ligament

- deep, dull ache, ill-defined
- worse in AM

- Mobicox

• Nerve

- sharp
- Shooting
- tingling/numb
- burning

→ Gabapentin

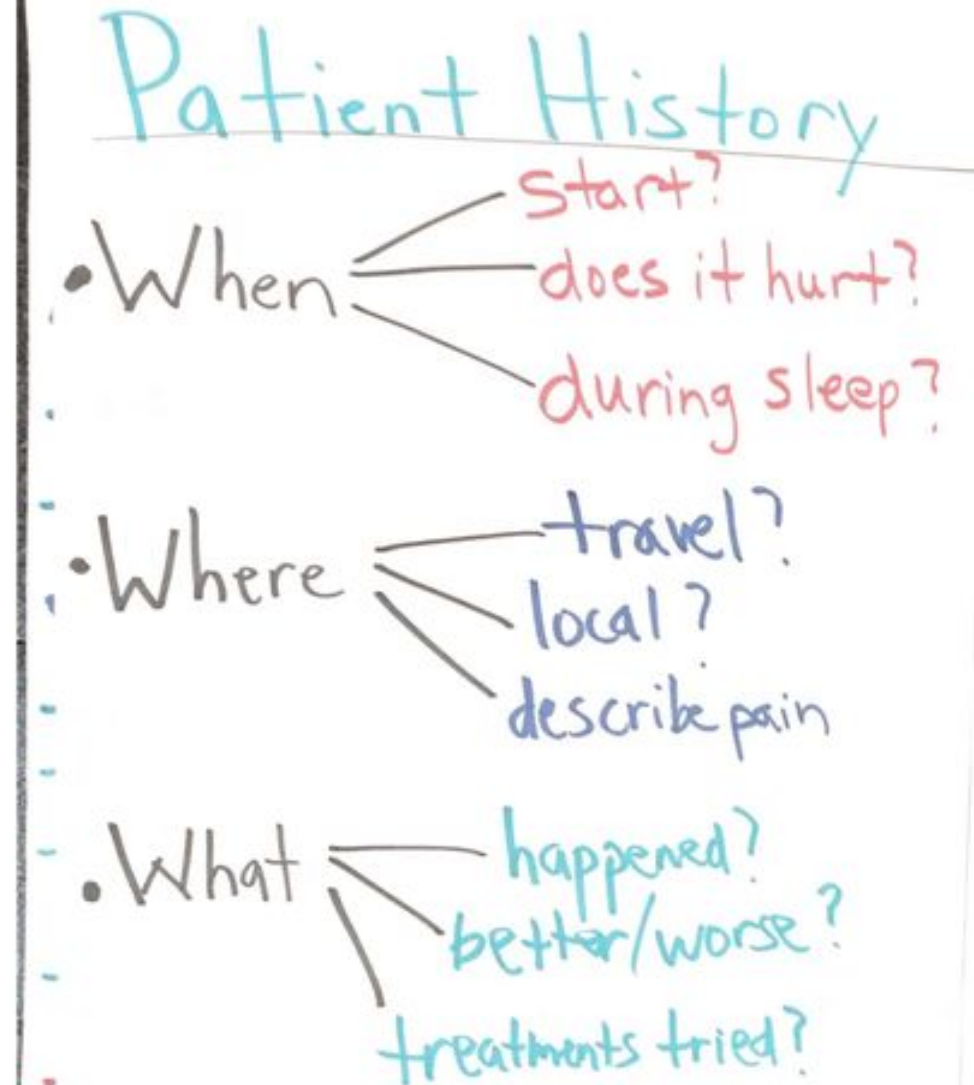
• Muscle

- tight
- Spasm
- better w movement

→ Baclofen

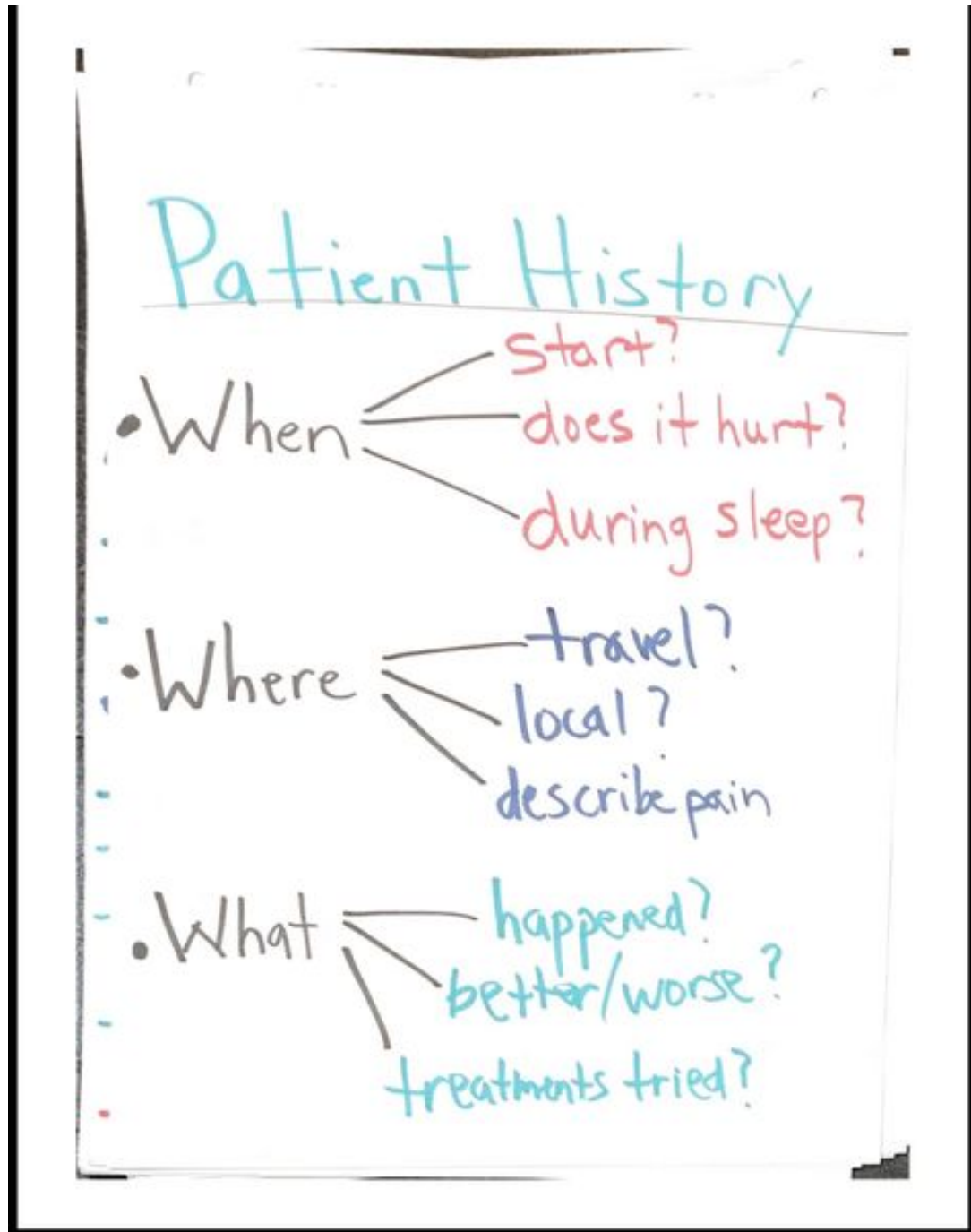
PAIN:
SCLEROTOMAL,
NERVE, MUSCULAR

9 QUESTIONS: THE PATIENT HISTORY



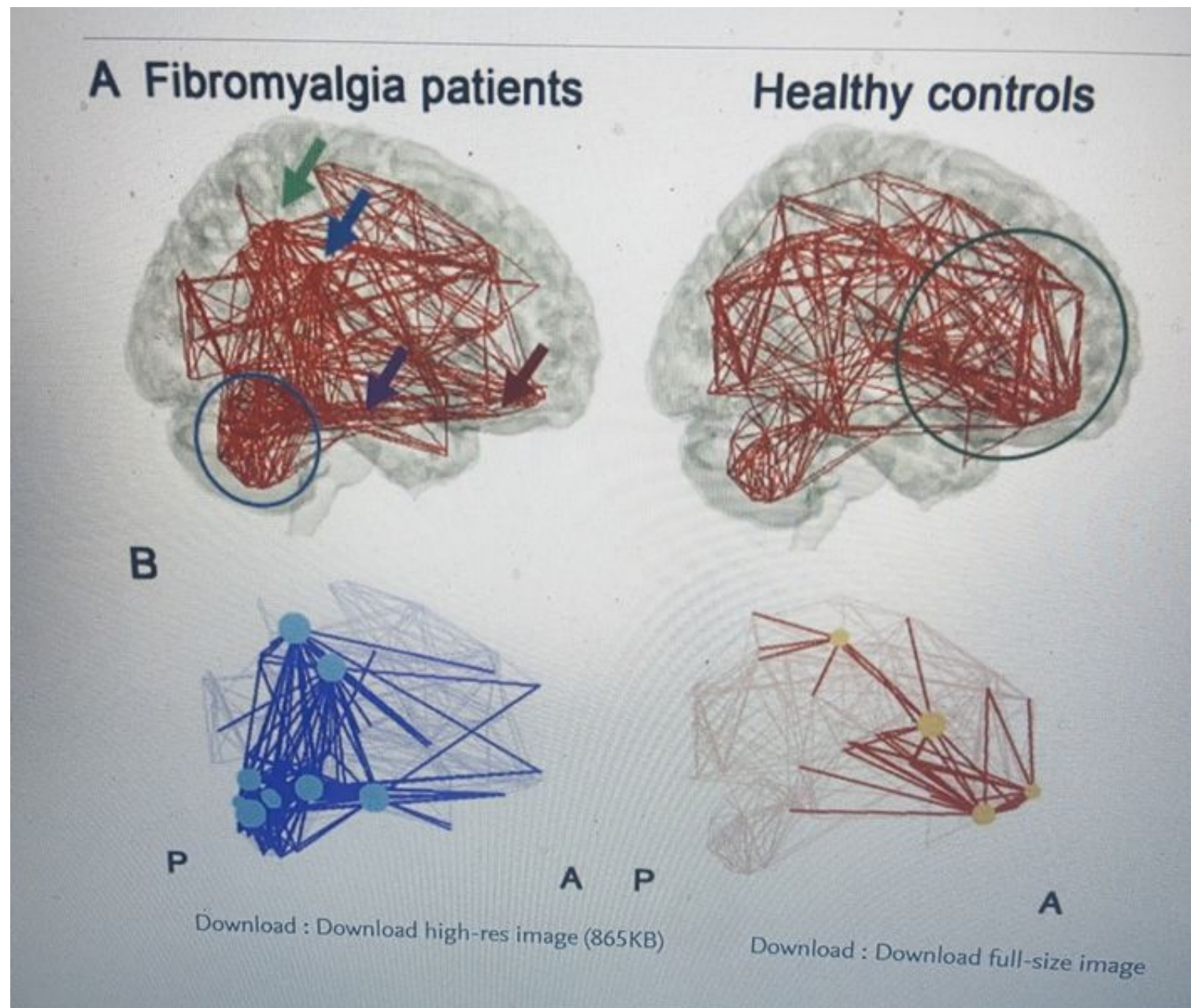
PATIENT HISTORY: CHRONIC SYSTEMIC

- PAIN IS ALL THE TIME
- SLEEP USUALLY AFFECTED
- NO DISTINCT ONSET OR MECHANISM
- PAIN IS DESCRIBED AS BEING EVERYWHERE
- NOTHING MAKES IT BETTER
- OFTEN ASSOCIATED WITH PSYCHO-EMOTIONAL CHARACTERISTICS
- IN JOINTS: REDNESS, SWELLING, TENDERNESS
- PAIN IS DUE TO CS CONDITIONS OR AMPLIFIED BY CS CONDITIONS.



THE ROLE OF DOPAMINE IN CHRONIC SYSTEMIC ANALYSIS

FIBROMYALGIA PATIENTS VS CONTROLS



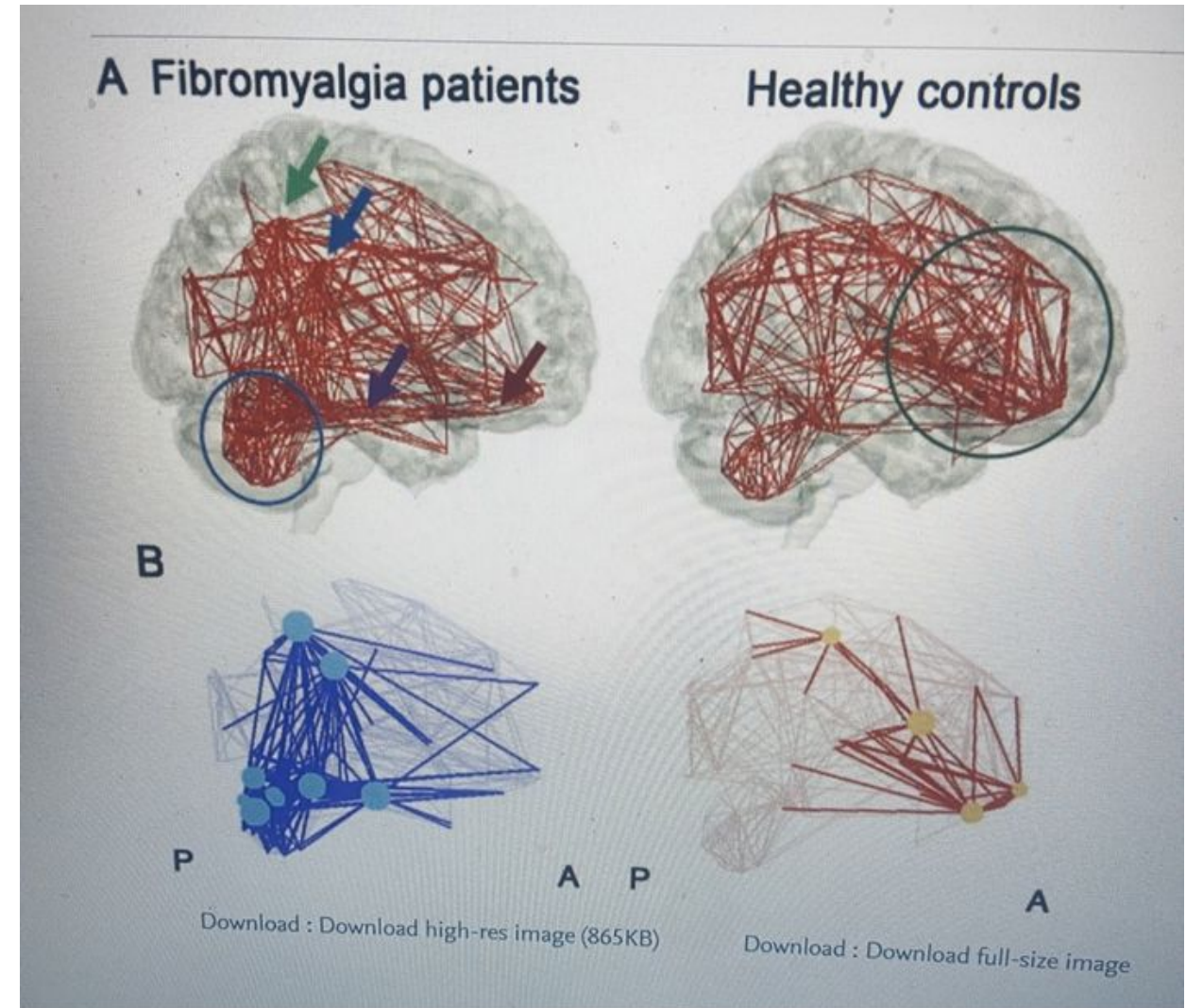
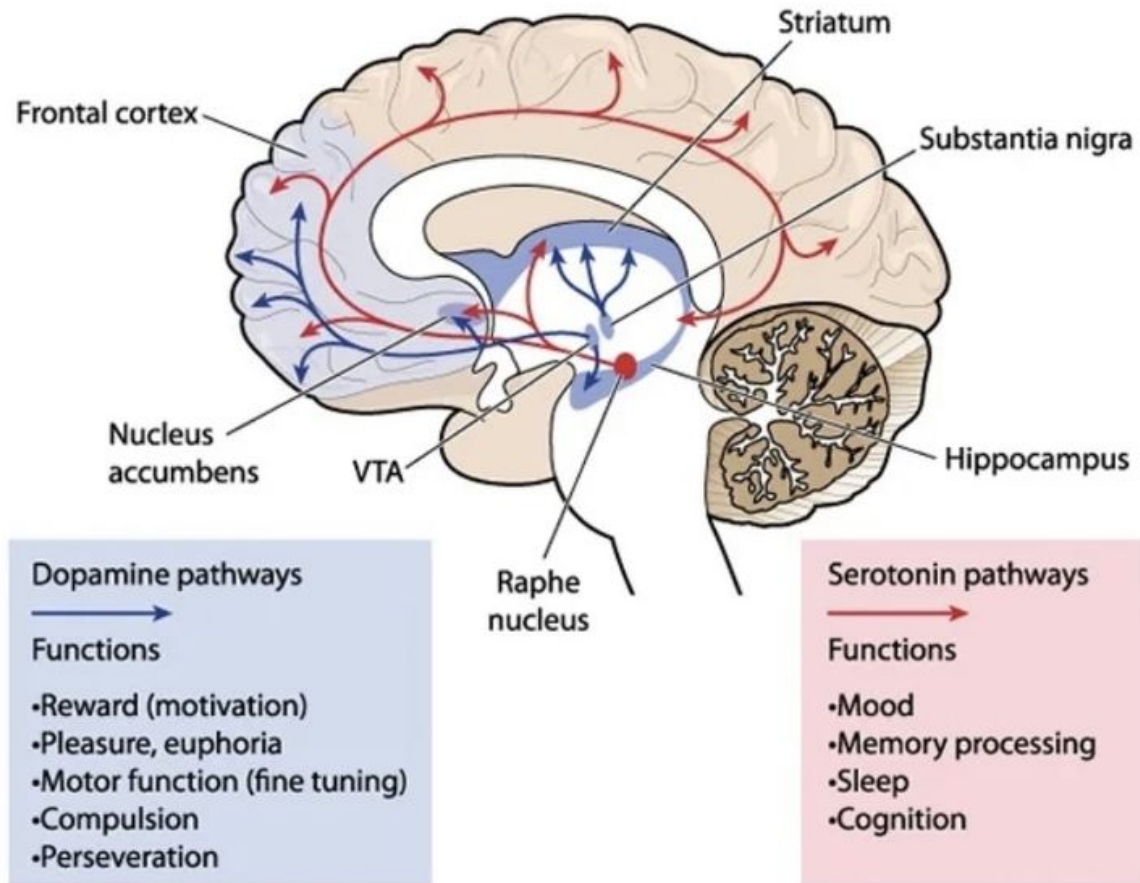
BRAIN CONDUCTIVITY (KIM ET AL, 2015)

- NORMAL BRAIN FUNCTION HAS A DENSE FRONTAL LOBE
- FM HAS MORE DENSE CONNECTIVITY IN CEREBELLUM WHICH IS CORRELATED WITH DEPRESSION AND HYPERALGESIA BECAUSE THERE IS A DISRUPTION IN PAIN PROCESSING.
- FM PATIENTS HAVE THE REDUCED ABILITY TO ENGAGE THE DESCENDING PAIN MODULATORY SYSTEM. IE ENDORPHIN RELEASE
- LETS EXAMINE THE RESEARCH DIAGRAMS

DOPAMINE

- A NEUROTRANSMITTER
- RUSSELL ET AL (1992) FOUND DECREASE OF DOPAMINE IN CSF OF FM PATIENTS.
- SIGNIFICANT REDUCTION IN UPTAKE IN THE DOPAMINERGIC CENTERS OF THE MIDBRAIN WHERE DOPAMINE PLAYS A ROLE IN NATURAL ANALGESIA
- THEY FOUND CHRONIC STRESS CAN DISRUPT DOPAMINE ACTIVITY IN THE VTA (VENTRAL TEGMENTAL AREA)

MIDBRAIN DIAGRAM



PRE-ASSESSMENT: CAUSES

LACK OF DOPAMINE IN POTENTIAL FM/CS PATIENTS

- STRESS
- ALCOHOL/DRUG ABUSE
- OBESITY
- POOR NUTRITION
- HISTORY OF TRAUMA
- DEPRESSION
- RESTLESS LEG SYNDROME
- PARKINSON'S DISEASE

THEREFORE..

- DECREASE DOPAMINE REDUCES ITS FUNCTION IN THE MIDBRAIN WHICH MAKE THE BRAIN LESS RESPONSIVE TO ANTICIPATION OF PAIN AND/OR RELIEF OF PAIN.
- THEREFORE STIMULI BECOME HYPERSENSITIVE SINCE THE BRAIN CANNOT PROPERLY MODULATE NOCICEPTION.
- **SO, NO MATTER HOW THE PATIENT PRESENTS PHYSICALLY – DO NOT LET THAT INFLUENCE YOUR TREATMENT IF YOU OBSERVE THE SIGNS DURING YOUR HISTORY AND INITIAL INTAKE.**

THE PATIENT INTAKE: YOUR CHEAT SHEET

Who may we thank for referring you? internet search

Reason for Visit: injury, back + neck When did this occur: arm/summer of 2019 back, neck due to arm pain injury to scoliosis Nov 2018

Due to auto/work injury? in arm

How would you describe the pain?: arm pain was excruciating - 1st physio twice / back + neck
muscle, nerve tight, sometimes burning

Is pain constant? yes Does pain travel? sometimes Where?

What makes it worse? ☒ Sitting ☐ Walking ☒ Bending ☒ Other too long

What makes it better? ☒ Ice ☒ Heat ☒ Rest ☒ Exercise ☒ Meds

What medications are you currently taking?: Bisoprolol, Eliquis, Rosuvastatin, Pantoprazole, Sertraline

Any previous trauma (fall) accident not sure if fall made matters worse

Any previous surgeries? years ago / hernia at 5 yrs / cyst removal both breasts

Any food / drug allergies? no

Have you seen any other doctors for this condition? yes / family doctor, neck specialist, shoulder clinic
orthopedic surgeon office physiotherapy twice

Revised: Aug 2016 1600 Rymal Road E | Hamilton, Ontario | L8W 3P1 PLEASE FILL OUT ALL 5 PAGES

Please check off the box if you have had or currently suffer from the following:

<input type="checkbox"/> AIDS/ HIV	<input type="checkbox"/> HEPATITIS <u>umbilical hernia ages 5</u>	<input type="checkbox"/> SCARLET FEVER
<input type="checkbox"/> ANAEMIA	<input checked="" type="checkbox"/> HERNIA - <u>small hiatal hernia now</u>	<input checked="" type="checkbox"/> SORE MUSCLES
<input checked="" type="checkbox"/> ARTHRITIS	<input type="checkbox"/> HIGH CHOLESTEROL/?	<input type="checkbox"/> STROKE
<input type="checkbox"/> ASTHMA	<input type="checkbox"/> BLOOD PRESSURE	<input type="checkbox"/> STD'S
<input type="checkbox"/> ANOREXIA	<input type="checkbox"/> KIDNEY DISEASE	<input type="checkbox"/> SKIN DISORDERS
<input type="checkbox"/> APPENDICITIS	<input type="checkbox"/> LIVER DISEASE	<input checked="" type="checkbox"/> TENDONITIS <u>complete tendon tear left arm</u>
<input type="checkbox"/> BLEEDING DISORDERS	<input checked="" type="checkbox"/> LOW BACK PAIN <u>sometimes</u>	<input type="checkbox"/> THYROID DISEASE
<input checked="" type="checkbox"/> BREAST LUMP - <u>cysts removed</u>	<input type="checkbox"/> LUNG DISEASE	<input type="checkbox"/> TUBERCULOSIS
<input type="checkbox"/> BRONCHITIS	<input checked="" type="checkbox"/> MUMPS	<input type="checkbox"/> TUMOURS
<input type="checkbox"/> BOWEL DISEASE	<input type="checkbox"/> MONONUCLEOSIS	<input type="checkbox"/> ULCERS
<input type="checkbox"/> BULIMIA	<input type="checkbox"/> MULTIPLE SCLEROSIS	<input type="checkbox"/> OTHER
<input type="checkbox"/> CANCER	<input type="checkbox"/> MUSCULAR DISEASE	
<input type="checkbox"/> EARACHES	<input checked="" type="checkbox"/> MENTAL DISEASE - <u>being treated for stress + anxiety</u>	
<input type="checkbox"/> DIABETES - <u>borderline</u>	<input type="checkbox"/> MIGRAINES	
<input type="checkbox"/> EMPHYSEMA	<input checked="" type="checkbox"/> NECK PAIN	
<input type="checkbox"/> EPILEPSY	<input type="checkbox"/> OSTEOPOROSIS - <u>osteoarthritis</u>	
<input checked="" type="checkbox"/> FRACTURES	<input type="checkbox"/> PNEUMONIA	
<input type="checkbox"/> GLAUCOMA	<input type="checkbox"/> POLIO	
<input type="checkbox"/> GOUT	<input type="checkbox"/> PROSTHESIS	
<input checked="" type="checkbox"/> HEADACHES <u>pressure</u>	<input type="checkbox"/> RHEUMATIC FEVER	
<input checked="" type="checkbox"/> HEART DISEASE - <u>atrial fib</u>	<input type="checkbox"/> PACEMAKER	

The information I have given in both the patient history and medical history are correct to the best of my knowledge.

SOME “WELL DEVELOPED” CS PATIENTS

- LIMITED MOTOR INHIBITION
- ASSESSMENT RESEMBLES A MECHANICAL PROBLEM
- LENGTH OF INJURY, PAIN IS VERY EXTENDED – UNLIKE PURE MECHANICAL
- SEEMINGLY SIMPLE FLARE-UPS OCCUR WHERE THAT DOESN'T HAPPEN TO MECHANICAL PRESENTATION
- HEAVY PSYCHOGENIC PRESENCE
- TREATMENT OFTEN FLARES THINGS UP, BUT THEN THEY ARE ABLE TO COMPLETE INTENSE WORKOUTS.

VARIETY CHRONIC PRESENTATIONS

“CROSSFIT” PATIENT

Please indicate what your coverage includes:

☐ Chiropractic

☒ Acupuncture

☒ Physiotherapy

☐ Foot Orthotics

☐ Don't Know

-herniated lumbar disc

-back pain (from dentist visit April 19/22)

-sciatica (new started May 20/22)

Who may we thank for referring you? Found online

→ happened when doing dentist visit

Reason for Visit: back pain (since April 19) When did this occur: April 19/22 - told I have a

new onset of sciatica in Rt buttock effective May 20/22 herniated lumbar disc

Due to auto/work injury?: No

How would you describe the pain?: back pain - constant, throbbing sciatica in Rt buttock - constant,

sharp stabbing, some numbness

Is pain constant? Yes

Does pain travel? Yes -

Where? from back (lower region)
to right buttock

What makes it worse? ☒ Sitting ☒ Walking ☒ Bending ☒ Other transfers

What makes it better? ☒ Ice ☐ Heat ☐ Rest ☐ Exercise ☒ Meds

sometimes

What medications are you currently taking?: Cytomel (25 mcg QD), thyroid - Gomasol 30 mg QD,

Progestrone 200mg at HS, E5 Advil, Naproxen 500 mg BID, cyclobenzaprine - 10 mg

Any previous trauma (fall, accident) No as HS

Any previous surgeries? bullectomy - left side 1993 and Rt side 1995, Lt oophorectomy

(2008/2009)

Any food / drug allergies? Yes - penicillin

Have you seen any other doctors for this condition? family dentist, chiropractor

"CROSSFIT" PATIENT

Medical History

Please check off the box if you have a family history of the following:

- | | |
|---|---|
| <input checked="" type="checkbox"/> Cancer
Type: <u>colon</u> | <input type="checkbox"/> Lung Disease |
| <input checked="" type="checkbox"/> Heart Disease | <input checked="" type="checkbox"/> High Cholesterol / Blood Pressure |
| <input checked="" type="checkbox"/> Diabetes | <input type="checkbox"/> Thyroid Disease |
| <input type="checkbox"/> At the best of my knowledge I am pregnant | |
| <input checked="" type="checkbox"/> At the best of my knowledge I am not pregnant | |
| * Should you become pregnant please advise the doctor at your next visit. | |

Please check off the box if you have had or currently suffer from the following:

- | | | |
|--|---|---|
| <input type="checkbox"/> AIDS/ HIV | <input type="checkbox"/> HEPATITIS | <input type="checkbox"/> SCARLET FEVER |
| <input checked="" type="checkbox"/> ANAEMIA <u>often</u> | <input type="checkbox"/> HERNIA | <input type="checkbox"/> SORE MUSCLES |
| <input type="checkbox"/> ARTHRITIS | <input type="checkbox"/> HIGH CHOLESTEROL/
BLOOD PRESSURE | <input type="checkbox"/> STROKE |
| <input type="checkbox"/> ASTHMA | <input type="checkbox"/> KIDNEY DISEASE | <input type="checkbox"/> STD'S |
| <input type="checkbox"/> ANOREXIA | <input type="checkbox"/> LIVER DISEASE | <input type="checkbox"/> SKIN DISORDERS |
| <input type="checkbox"/> APPENDICITIS | <input checked="" type="checkbox"/> LOW BACK PAIN <u>recent</u> | <input type="checkbox"/> TENDONITIS |
| <input type="checkbox"/> BLEEDING DISORDERS | <input type="checkbox"/> LUNG DISEASE | <input checked="" type="checkbox"/> THYROID DISEASE |
| <input type="checkbox"/> BREAST LUMP | <input type="checkbox"/> MUMPS | <input type="checkbox"/> TUBERCULOSIS |
| <input checked="" type="checkbox"/> BRONCHITIS | <input type="checkbox"/> MONONUCLEOSIS | <input type="checkbox"/> TUMOURS |
| <input checked="" type="checkbox"/> BOWEL DISEASE | <input type="checkbox"/> MULTIPLE SCLEROSIS | <input checked="" type="checkbox"/> ULCERS |
| <input type="checkbox"/> BULIMIA | <input type="checkbox"/> MUSCULAR DISEASE | <input checked="" type="checkbox"/> OTHER |
| <input type="checkbox"/> CANCER | <input checked="" type="checkbox"/> MENTAL DISEASE | <u>Depression</u> |
| <input checked="" type="checkbox"/> EARACHES | <input type="checkbox"/> MIGRAINES | <u>Anxiety</u> |
| <input type="checkbox"/> DIABETES | <input type="checkbox"/> NECK PAIN | <u>Endometriosis</u> |
| <input type="checkbox"/> EMPHYSEMA | <input type="checkbox"/> OSTEOPOROSIS | |
| <input type="checkbox"/> EPILEPSY | <input checked="" type="checkbox"/> PNEUMONIA | |
| <input type="checkbox"/> FRACTURES | <input type="checkbox"/> POLIO | |
| <input type="checkbox"/> GLAUCOMA | <input type="checkbox"/> PROSTHESIS | |
| <input type="checkbox"/> GOUT | <input type="checkbox"/> RHEUMATIC FEVER | |
| <input type="checkbox"/> HEADACHES | <input type="checkbox"/> PACEMAKER | |
| <input type="checkbox"/> HEART DISEASE | | |


The information I have given in both the patient history and medical history are correct to the best of my knowledge.

May 25/2022
Date

EXSTORE SCAN AND NOTE TO DOC

EXSTORE® Exam Sheet	
UPPER EXTREMITY SCAN	LOWER EXTREMITY SCAN
ROM	ROM
C-Spine <input type="checkbox"/>	L-Spine <input type="checkbox"/>
GH joint <input type="checkbox"/>	Hip <input type="checkbox"/>
ST joint <input type="checkbox"/>	SLR <input type="checkbox"/>
STABILITY TESTING	STABILITY TESTING
Anterior Deltoidok <input type="checkbox"/>	Hip Flexorsok <input type="checkbox"/>
Middle Deltoidok <input type="checkbox"/>	TFLok <input type="checkbox"/>
Posterior Deltoidok <input type="checkbox"/>	Gluteus Mediusok <input type="checkbox"/>
External Rotator of GH jointok <input type="checkbox"/>	(Ant.)
Internal Rotator of GH jointok <input type="checkbox"/>	Adductorsok <input type="checkbox"/>
Supraspinatusok <input type="checkbox"/>	Gluteus Min.ok <input type="checkbox"/>
Stability of ST jointok <input type="checkbox"/>	Gluteus Max.ok <input type="checkbox"/>
(via serratus anterior)	Obliquesok <input type="checkbox"/>
FUNCTIONAL TESTING	FUNCTIONAL TESTING
ADL's <input type="checkbox"/>	Squat <input type="checkbox"/>
Pushup <input type="checkbox"/>	Gait <input type="checkbox"/>
Wall Test <input type="checkbox"/>	ADL's <input type="checkbox"/>
Other <input type="checkbox"/>	Other <input type="checkbox"/>

EXSTORE®

HAMILTON BACK CLINIC	
	Dr. Anthony J. Lombardi MANUAL MEDICINE SPECIALIST CHIROPRACTOR 1600 RYMAL ROAD EAST HAMILTON, ONTARIO L8W 3P1 Tel: 905-692-4222 Fax: 905-692-0222
Patient Name: _____	
Please send above patient to do follow up bloodwork to rule out pathology.	
Bloodwork markers:	
- ANA	
- RF	
- HLA-B27	
Date: May 27/2022	

CHRONIC SYSTEMIC 1

Reason for Visit: MULTIPLE NECK/SPINE ISSUES When did this occur: 2011 T 2022

Due to auto/work injury?: DISCUSS

How would you describe the pain?: HEAVY INCAPACITATING WEIGHT WHEN LEANING

Is pain constant? YES Does pain travel? YES Where? HEAD SLIGHTLY FORWARD - EXTREME JOINT AND
(SEE DETAILS) RHEUMATOID

What makes it worse? ☐ Sitting ☐ Walking ☐ Bending ☒ Other + SPASH / MUSCLE PAIN

What makes it better? ☐ Ice ☐ Heat ☒ Rest ☐ Exercise ☐ Meds FROM

What medications are you currently taking? TRAMACET, NAPROXIN 350
IBUPROFEN 600 BACLOFEN CYCLOBENZ. TRAPHERS

Any previous trauma (fall, accident) BASE OF SKULL (C1-C7) and NECK

Any previous surgeries? ABLATION C4-C7 March 2012 CANNABIS OIL SPRAY / TOP
MARCAIN / LIDOLAN

Any food / drug allergies? HERBAL BUNCH PLORES RIGHT AND LEFT SIDE

Have you seen any other doctors for this condition? YES MANY PROCTOTHERAPY

Revised: Aug 2016

1600 Rymal Road E | Hamilton, Ontario | L8W 3P1

PLEASE FILL OUT ALL 5 PAGES

Please check off the box if you have had or currently suffer from the following:

- | | | |
|---|--|---|
| <input type="checkbox"/> AIDS/ HIV | <input type="checkbox"/> HEPATITIS | <input type="checkbox"/> SCARLET FEVER |
| <input type="checkbox"/> ANAEMIA | <input type="checkbox"/> HERNIA | <input checked="" type="checkbox"/> SORE MUSCLES |
| <input checked="" type="checkbox"/> ARTHRITIS | <input type="checkbox"/> HIGH CHOLESTEROL/ | <input type="checkbox"/> STROKE |
| <input checked="" type="checkbox"/> ASTHMA | <input type="checkbox"/> BLOOD PRESSURE | <input type="checkbox"/> STD'S |
| <input type="checkbox"/> ANOREXIA | <input type="checkbox"/> KIDNEY DISEASE | <input checked="" type="checkbox"/> SKIN DISORDERS <i>psoriasis</i> |
| <input type="checkbox"/> APPENDICITIS | <input type="checkbox"/> LIVER DISEASE | <input type="checkbox"/> TENDONITIS |
| <input type="checkbox"/> BLEEDING DISORDERS | <input checked="" type="checkbox"/> LOW BACK PAIN <i>AG 17 202</i> | <input type="checkbox"/> THYROID DISEASE |
| <input type="checkbox"/> BREAST LUMP | <input checked="" type="checkbox"/> LUNG DISEASE | <input type="checkbox"/> TUBERCULOSIS |
| <input type="checkbox"/> BRONCHITIS | <input type="checkbox"/> MUMPS | <input type="checkbox"/> TUMOURS |
| <input type="checkbox"/> BOWEL DISEASE | <input type="checkbox"/> MONONUCLEOSIS | <input type="checkbox"/> ULCERS |
| <input type="checkbox"/> BULIMIA | <input type="checkbox"/> MULTIPLE SCLEROSIS | <input type="checkbox"/> OTHER |
| <input type="checkbox"/> CANCER | <input type="checkbox"/> MUSCULAR DISEASE | |
| <input type="checkbox"/> EARACHES | <input type="checkbox"/> MENTAL DISEASE | <u>SARCOIDOSIS</u> |
| <input type="checkbox"/> DIABETES | <input checked="" type="checkbox"/> MIGRAINES | <u>LEUKODIOSIS</u> |
| <input type="checkbox"/> EMPHYSEMA | <input checked="" type="checkbox"/> NECK PAIN | <u>OSTEOARTHRITIS</u> |
| <input type="checkbox"/> EPILEPSY | <input type="checkbox"/> OSTEOPOROSIS | <u>(OSTEOPHITES)</u> |
| <input checked="" type="checkbox"/> FRACTURES | <input checked="" type="checkbox"/> PNEUMONIA | <u>HERNATED DISC (STERN)</u> |
| <input type="checkbox"/> GLAUCOMA | <input type="checkbox"/> POLIO | <u>CHRONIC MUSCLE SPASM</u> |
| <input type="checkbox"/> GOUT | <input type="checkbox"/> PROSTHESIS | |
| <input checked="" type="checkbox"/> HEADACHES | <input type="checkbox"/> RHEUMATIC FEVER | |
| <input checked="" type="checkbox"/> HEART DISEASE | <input type="checkbox"/> PACEMAKER | |

The information I have given in both the patient history and medical history are correct to the

CHRONIC SYSTEMIC 2

Please check off the box if you have a **family history** of the following:

<input type="checkbox"/> Cancer	<input type="checkbox"/> Lung Disease
Type: _____	<input type="checkbox"/> High Cholesterol / Blood Pressure
<input type="checkbox"/> Heart Disease	<input type="checkbox"/> Thyroid Disease
<input checked="" type="checkbox"/> Diabetes - <i>Father's side</i>	<input type="checkbox"/> Dementia <i>Mom age 83</i>
<input type="checkbox"/> At the best of my knowledge I am pregnant	
<input type="checkbox"/> At the best of my knowledge I am not pregnant	

* Should you become pregnant please advise the doctor at your next visit.

Please check off the box if you have had or currently suffer from the following:

<input type="checkbox"/> AIDS/ HIV	<input type="checkbox"/> HEPATITIS	<input type="checkbox"/> SCARLET FEVER
<input type="checkbox"/> ANAEMIA <i>1991</i>	<input type="checkbox"/> HERNIA	<input type="checkbox"/> SORE MUSCLES
<input checked="" type="checkbox"/> ARTHRITIS <i>hand injury</i>	<input type="checkbox"/> HIGH CHOLESTEROL/ BLOOD PRESSURE	<input type="checkbox"/> STROKE
<input type="checkbox"/> ASTHMA	<input type="checkbox"/> KIDNEY DISEASE	<input type="checkbox"/> STD'S
<input type="checkbox"/> ANOREXIA	<input type="checkbox"/> LIVER DISEASE	<input type="checkbox"/> SKIN DISORDERS
<input type="checkbox"/> APPENDICITIS	<input checked="" type="checkbox"/> LOW BACK PAIN	<input type="checkbox"/> TENDONITIS
<input type="checkbox"/> BLEEDING DISORDERS	<input type="checkbox"/> LUNG DISEASE	<input type="checkbox"/> THYROID DISEASE
<input type="checkbox"/> BREAST LUMP	<input type="checkbox"/> MUMPS	<input type="checkbox"/> TUBERCULOSIS
<input type="checkbox"/> BRONCHITIS	<input type="checkbox"/> MONONUCLEOSIS	<input type="checkbox"/> TUMOURS
<input type="checkbox"/> BOWEL DISEASE	<input type="checkbox"/> MULTIPLE SCLEROSIS	<input type="checkbox"/> ULCERS <i>Autoimmune</i>
<input type="checkbox"/> BULIMIA	<input checked="" type="checkbox"/> MUSCULAR DISEASE ?	<input checked="" type="checkbox"/> OTHER <i>Vasculitis 12/2018-3/2019</i>
<input type="checkbox"/> CANCER	<input type="checkbox"/> MENTAL DISEASE	<i>Balancing + working needs help.</i>
<input type="checkbox"/> EARACHES	<input type="checkbox"/> MIGRAINES	<i>On a monitored potassium controlled diet to maintain kidneys.</i>
<input checked="" type="checkbox"/> DIABETES <i>Type 2</i>	<input type="checkbox"/> NECK PAIN	<i>★ 2020-2021 lost over 55 lbs + improved diabetes</i>
<input type="checkbox"/> EMPHYSEMA	<input type="checkbox"/> OSTEOPOROSIS	
<input type="checkbox"/> EPILEPSY	<input checked="" type="checkbox"/> PNEUMONIA <i>12/2008</i>	
<input type="checkbox"/> FRACTURES	<input type="checkbox"/> POLIO <i>→ heart failure</i>	
<input type="checkbox"/> GLAUCOMA	<input type="checkbox"/> PROSTHESIS	
<input type="checkbox"/> GOUT	<input type="checkbox"/> RHEUMATIC FEVER	
<input type="checkbox"/> HEADACHES <i>Age 56</i>	<input type="checkbox"/> PACEMAKER	
<input checked="" type="checkbox"/> HEART DISEASE <i>suspected silent heart</i>		

The information I have given in both the patient history and medical history are correct to the

CHRONIC SYSTEMIC 3

Reason for Visit: Maintenance When did this occur: help with upper back

Due to auto/work injury?: MVA - 1994^{3/}, 11/2002, 8/2006

How would you describe the pain?: Neck in winter mostly, shoulders in stress

Is pain constant? Does pain travel? top of shoulder down to wrist Where? Legs fall asleep -

What makes it worse? ☒ Sitting ☐ Walking ☐ Bending ☐ Other

What makes it better? ☐ Ice ☒ Heat ☐ Rest ☒ Exercise ☐ Meds

What medications are you currently taking?: salbutamol as needed, tylenol 500 usually in winter

★ Any previous trauma (fall, accident) 1st accident broke my radius and had massage for 4 months
2nd - Knee contusions - resolved 7 mds - physio

Any previous surgeries? no

Any food / drug allergies? some nuts, sesame, all oils except olive oil, Latex, NSAID, doxycycline, ragweed - major asthma attack 1986

Have you seen any other doctors for this condition?

Recently Dr. Navala Hamilton Health Sciences - digestive disorders specialist

Please check off the box if you have had or currently suffer from the following:

Cervicalgia - 2006 - present

- ☐ AIDS/ HIV
- ☐ ANAEMIA
- ☒ ARTHRITIS - *C1, 3, 4, 5*
- ☒ ASTHMA
- ☐ ANOREXIA
- ☐ APPENDICITIS
- ☐ BLEEDING DISORDERS
- ☐ BREAST LUMP
- ☐ BRONCHITIS
- ☐ BOWEL DISEASE
- ☐ BULIMIA
- ☐ CANCER
- ☒ EARACHES
- ☐ DIABETES
- ☐ EMPHYSEMA
- ☐ EPILEPSY
- ☐ FRACTURES
- ☐ GLAUCOMA
- ☐ GOUT
- ☐ HEADACHES
- ☐ HEART DISEASE

- ☐ HEPATITIS
- ☐ HERNIA
- ☐ HIGH CHOLESTEROL/
- ☐ BLOOD PRESSURE
- ☐ KIDNEY DISEASE
- ☐ LIVER DISEASE
- ☐ LOW BACK PAIN
- ☐ LUNG DISEASE
- ☐ MUMPS
- ☒ MONONUCLEOSIS *1996 10 mos.*
- ☐ MULTIPLE SCLEROSIS
- ☐ MUSCULAR DISEASE
- ☒ MENTAL DISEASE - *anxiety*
- ☐ MIGRAINES
- ☒ NECK PAIN
- ☐ OSTEOPOROSIS
- ☐ PNEUMONIA
- ☐ POLIO
- ☐ PROSTHESIS
- ☐ RHEUMATIC FEVER
- ☐ PACEMAKER

- ☒ SCARLET FEVER *3 mos old*
- ☐ SORE MUSCLES
- ☐ STROKE
- ☒ STD'S *resolved HPV*
- ☐ SKIN DISORDERS
- ☒ TENDONITIS *resolved*
- ☐ THYROID DISEASE
- ☐ TUBERCULOSIS
- ☐ TUMOURS
- ☐ ULCERS
- ☒ OTHER

*Problems detoxing
from mould exposure
1999, 2005
, 2013*

**Mild Chron's*

*Stomach pains
IBD - 10/2021 -
7/2022*

The information I have given in both the patient history and medical history are correct to the best of my knowledge.

CHRONIC SYSTEMIC 4

Medical History

Please check off the box if you have a **family history** of the following:

- | | |
|---|---|
| <input checked="" type="checkbox"/> Cancer
Type: <u>SKIN</u> | <input type="checkbox"/> Lung Disease |
| <input type="checkbox"/> Heart Disease | <input checked="" type="checkbox"/> High Cholesterol / Blood Pressure |
| <input checked="" type="checkbox"/> Diabetes | <input type="checkbox"/> Thyroid Disease |
| <input type="checkbox"/> At the best of my knowledge I am pregnant | |
| <input checked="" type="checkbox"/> At the best of my knowledge I am not pregnant | |

* Should you become pregnant please advise the doctor at your next visit.

Please check off the box if you have had or currently suffer from the following:

- | | | |
|---|---|--|
| <input type="checkbox"/> AIDS/ HIV | <input type="checkbox"/> HEPATITIS | <input type="checkbox"/> SCARLET FEVER |
| <input type="checkbox"/> ANAEMIA | <input type="checkbox"/> HERNIA | <input type="checkbox"/> SORE MUSCLES |
| <input checked="" type="checkbox"/> ARTHRITIS | <input checked="" type="checkbox"/> HIGH CHOLESTEROL/
BLOOD PRESSURE | <input type="checkbox"/> STROKE |
| <input type="checkbox"/> ASTHMA | <input type="checkbox"/> KIDNEY DISEASE | <input type="checkbox"/> STD'S |
| <input type="checkbox"/> ANOREXIA | <input type="checkbox"/> LIVER DISEASE | <input type="checkbox"/> SKIN DISORDERS |
| <input type="checkbox"/> APPENDICITIS | <input checked="" type="checkbox"/> LOW BACK PAIN | <input checked="" type="checkbox"/> TENDONITIS |
| <input type="checkbox"/> BLEEDING DISORDERS | <input type="checkbox"/> LUNG DISEASE | <input type="checkbox"/> THYROID DISEASE |
| <input checked="" type="checkbox"/> BREAST LUMP | <input type="checkbox"/> MUMPS | <input type="checkbox"/> TUBERCULOSIS |
| <input checked="" type="checkbox"/> BRONCHITIS | <input type="checkbox"/> MONONUCLEOSIS | <input type="checkbox"/> TUMOURS |
| <input checked="" type="checkbox"/> BOWEL DISEASE | <input checked="" type="checkbox"/> MULTIPLE SCLEROSIS | <input type="checkbox"/> ULCERS |
| <input type="checkbox"/> BULIMIA | <input type="checkbox"/> MUSCULAR DISEASE | <input checked="" type="checkbox"/> OTHER |
| <input type="checkbox"/> CANCER | <input type="checkbox"/> MENTAL DISEASE | <u>VERTIGO</u> |
| <input type="checkbox"/> EARACHES | <input checked="" type="checkbox"/> MIGRAINES | _____ |
| <input checked="" type="checkbox"/> DIABETES | <input checked="" type="checkbox"/> NECK PAIN | _____ |
| <input type="checkbox"/> EMPHYSEMA | <input type="checkbox"/> OSTEOPOROSIS | _____ |
| <input type="checkbox"/> EPILEPSY | <input type="checkbox"/> PNEUMONIA | _____ |
| <input type="checkbox"/> FRACTURES | <input type="checkbox"/> POLIO | _____ |
| <input type="checkbox"/> GLAUCOMA | <input type="checkbox"/> PROSTHESIS | _____ |
| <input type="checkbox"/> GOUT | <input type="checkbox"/> RHEUMATIC FEVER | _____ |
| <input checked="" type="checkbox"/> HEADACHES | <input type="checkbox"/> PACEMAKER | _____ |
| <input type="checkbox"/> HEART DISEASE | | |

The information I have given in both the patient history and medical history are correct to the

EXSTORE

WHAT IS EXSTORE? EXAMINE & RESTORE

What is EXSTORE

- Reveal motor inhibition that is responsible for MOVEMENT/STABILITY of the SKELETAL GIRDLES

- Scapular
- pelvic

STREAMLINE GAIT ANALYSIS

- ASYMMETRY
- ARM SWING/STRIDE
- TEMPO

DYNAMIC GAIT ANALYSIS:

ASYMMETRY, ARM SWING/STRIDE, TEMPO



SUBTALAR JOINT

- BW CALCANEUS AND TALUS BONES
- SITE OF INVERSION/EVERSION DURING GAIT
- SINUS TARSI HOUSES INTEROSSEOUS TALOCALCANEAL LIGAMENT
- TIBIALIS POSTERIOR AND PERONEUS LONGUS FORM A STIRRUP TO STABILIZE THE JOINT
- JOINT INJURED DURING CLASSIC ANKLE INVERSION SPRAIN



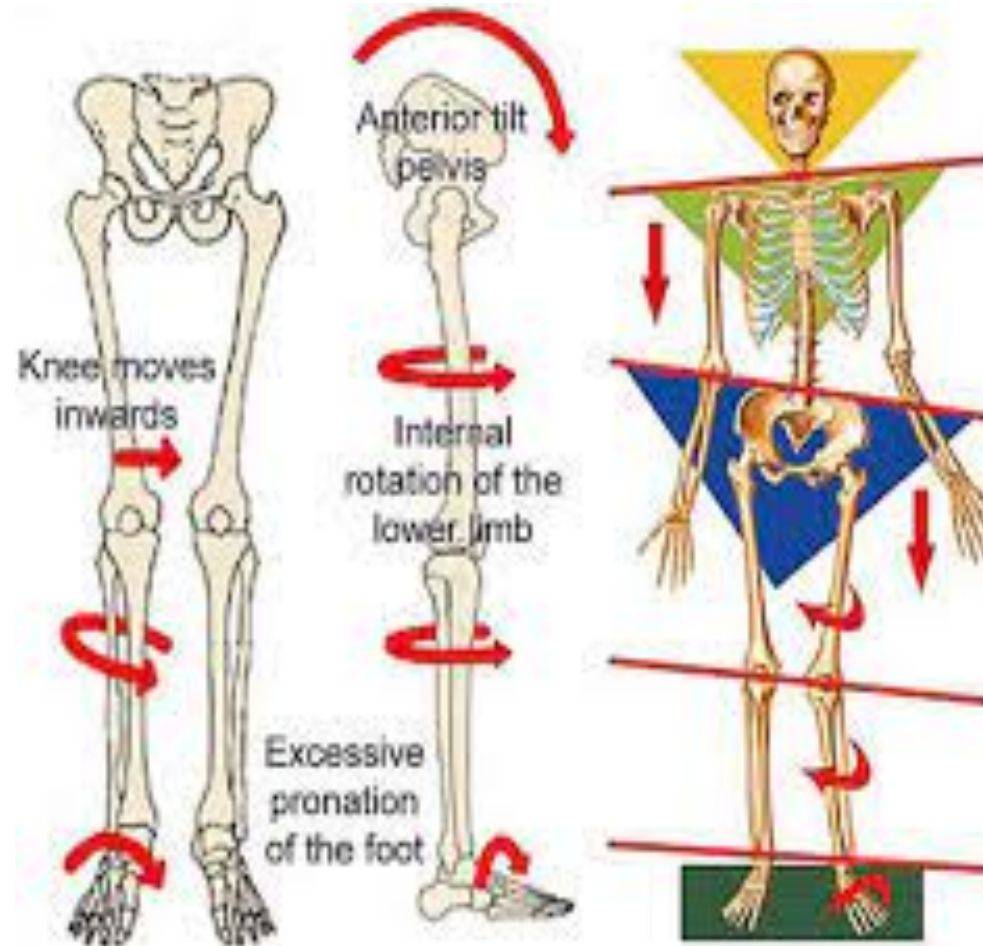
SUB TALAR PRONATION/ SUPINATION



SUBTALAR JOINT PRONATION



EFFECTS OF SUBTALAR JOINT PRONATION



SUBTALAR JOINT SUPINATION



EFFECTS OF SUBTALAR JOINT SUPINATION

- HALLUX VALGUS/RIGIDUS
- SUPINATION PROMOTES INVERSION OF THE ANKLE
- INVERSION = CONTRACTION OF TIB POST AND SOLEUS
- PROLONGED CONTRACTION OF TIBIALIS POSTERIOR AND SOLEUS = TIGHT LOWER CALVES AND ACHILLES TIGHTNESS AND PAIN.
- PROLONGED ECCENTRIC CONTRACTION AND INHIBITION OF PERONEI MUSCLES.

WHAT IS MOTOR INHIBITION?

MOTOR INHIBITION (MI)



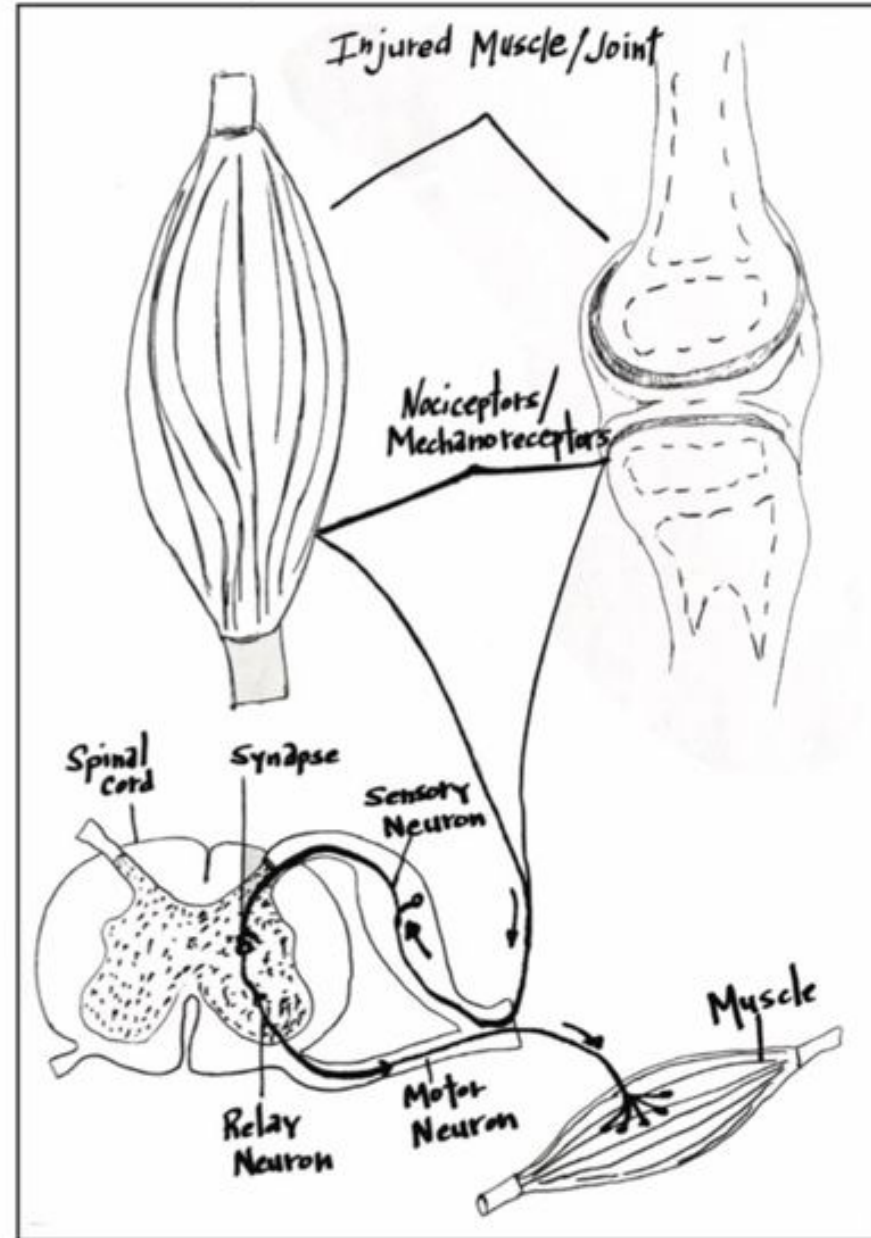
dysfunction of
neuromuscular jnt
(NMJ)

Causes of MI (noxious stimulus)

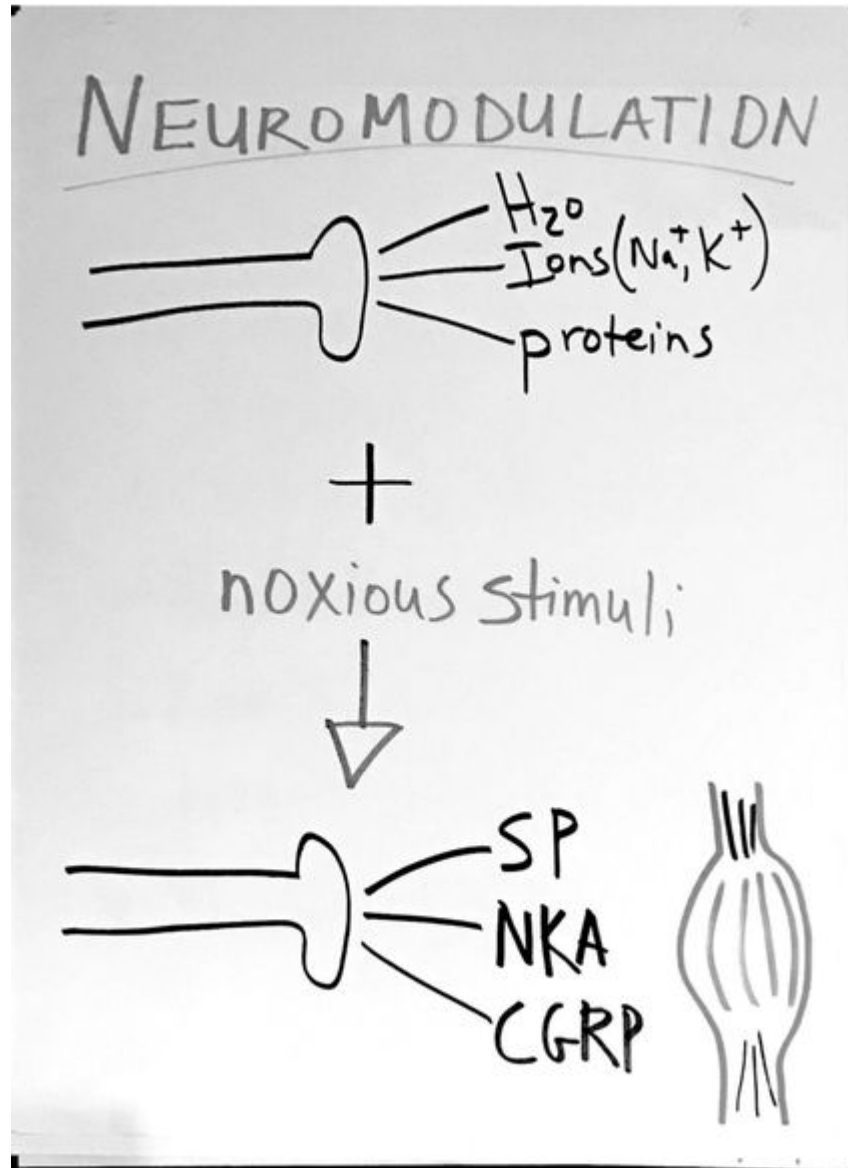
- PAIN
- Trauma (RSI)
- Δ 's joint (arthritis)

can tell us this is possible.

NOXIOUS STIMULI DECREASE MOTOR OUTPUT



NEUROGENIC INFLAMMATION & NEUROMODULATION



Effect of Neurogenic Inflamm

① Neurosensitivity (PAIN)

② ADHESION formation

- tight bands

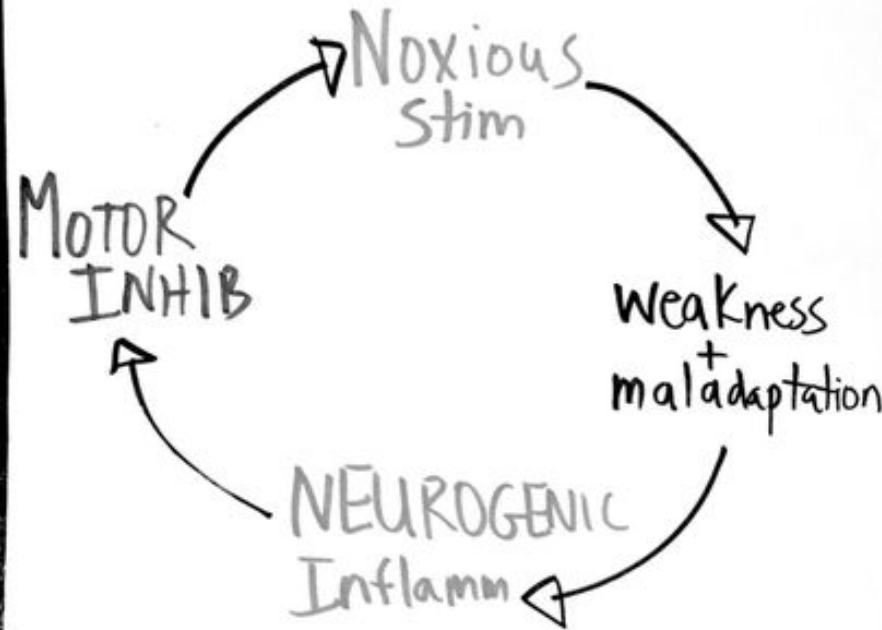
- knots

- trigger points

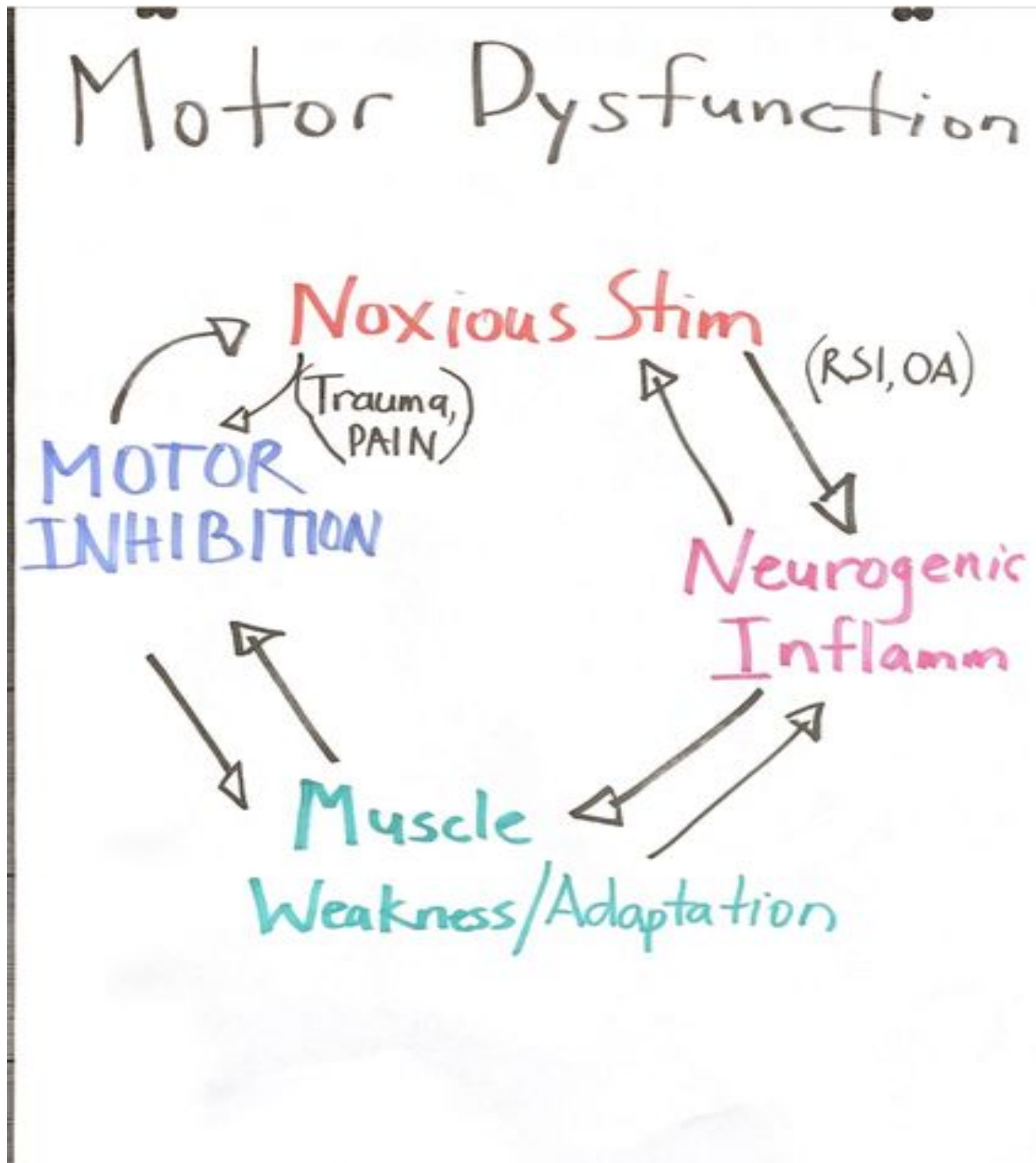
- * Motor inhibition

MOTOR DYSFUNCTION: THE SPIRALING CYCLE

MOTOR DYSFUNCTION



BI-CYCLIC MOTOR INHIBITION



EXSTORE: ASSESS, NEUROMODULATE, RESTRUCTURE

GOALS of EXSTORE

- FIND what isn't working
(- 1 or 2 mins) ASSESS
- Fix what isn't working
NEUROMODULATE
- Improve Soft Tissue
RESTRUCTURE

CLINICAL TRENDS & TENDENCIES

CLINICAL TRENDS

- ankle: TFL, gluteus medius
- Knee: TFL, gluteus medius
- hip: obliques, gluteus minimus
- Low back: obliques, gluteus med/max
- Neck: serratus anterior, clavicle
- Shoulder/UE: serratus anterior, clavicle

MUSCLE TESTING: DEFINED

Muscle Testing

- Patient initiated
 - cue patient to resist FIRST
- Pressure
 - meet resistive force
- Duration
 - 3 to 5 sec max inhibited muscles

TREATMENT GAMEPLAN

MECHANICAL INJURIES

- **2X PER WEEK FOR 3 WEEKS THEN RE-ASSESS**
- DURING RE-ASSESSMENT YOU ARE LOOKING FOR A 50% MINIMUM IMPROVEMENT BASED ON MEASURABLE BENCHMARKS
- **BENCHMARKS CAN INCLUDE:**
 - QUALITY OF SLEEP
 - INTENSITY, DURATION, AND FREQUENCY OF PAIN
 - INTAKE OF PAIN MEDICATION
 - CENTRALIZATION OF PAIN
 - CHANGES IN OBJECTIVE ASSESSMENT

PAIN PRESENTING WITH CHRONIC SYSTEMIC CONDITIONS (TRADITIONAL OBSERVATIONS)

- **TWICE PER WEEK FOR 4-6 WEEKS WITH A 15% IMPROVEMENT.**
- EXPLAIN AND STRESS THAT THEIR PRE-EXISTING, COMPLIMENTARY DISEASE LIMITS THEIR BODIES ABILITY TO RESPOND TO TREATMENT.
- SO THEY WILL RESPOND AT A SLOWER RATE AND EACH RESPONSE IN SOMEONE WITH CHRONIC SYSTEMIC CONDITIONS VARIES.
- EXPLAIN TO THEM THAT THE LONGER THEY HAVE HAD THE PAIN AND THE CONSEQUENTLY THE UNDERLAYING CONDITION – THE LONGER THE TREATMENT MAY TAKE TO HAVE AN EFFECT.
- EXPLAIN AND UNDERSTAND THAT THIS TYPE OF CONDITION NEEDS MULTIMODAL INPUT: ACUPUNCTURE, MANUAL WORK, HOME EXERCISE, MEDITATION, PSYCHOLOGICAL COUNSELLING, MEDICATION ETC.

UNDERSTANDING OVERALL
EFFECT OF TREATMENT ON
AUTONOMIC NERVOUS SYSTEM

Effect of Treatment on ANS

TREATMENT



PAIN



adaptation



reduces pain



improves sleep



allows for exercise



allows better appetite



improves overall
health

VISIT 1

- FOCUSED HISTORY
- ASSESSMENT:
 - EXSTORE IF MECHANICAL
 - PALPATION IF CHRONIC SYSTEMIC
- CORRECT INHIBITIONS/BEGIN SYSTEMIC TREATMENT
- MANUAL THERAPY MAY BE LOCALLY APPLIED TO IMPROVE SOFT TISSUE HEALTH AND IMPROVE ROM.

VISIT 2

- RE-ASSESS EXSTORE, ROM ETC
- CORRECT INHIBITIONS IF A MECHANICAL PRESENTATION
- TREAT LOCAL AREA OF TIGHT BANDS/ADHESIONS WITH *RENOVATION TECHNIQUES*
- IF CHRONIC SYSTEMIC CONTINUE THAT TREATMENT (PERFUSION, AURICULAR, DISTAL)
- BEGIN MANUAL THERAPY LOCALLY TO IMPROVE SOFT TISSUE HEALTH AND IMPROVE ROM.

VISIT 3 AND BEYOND

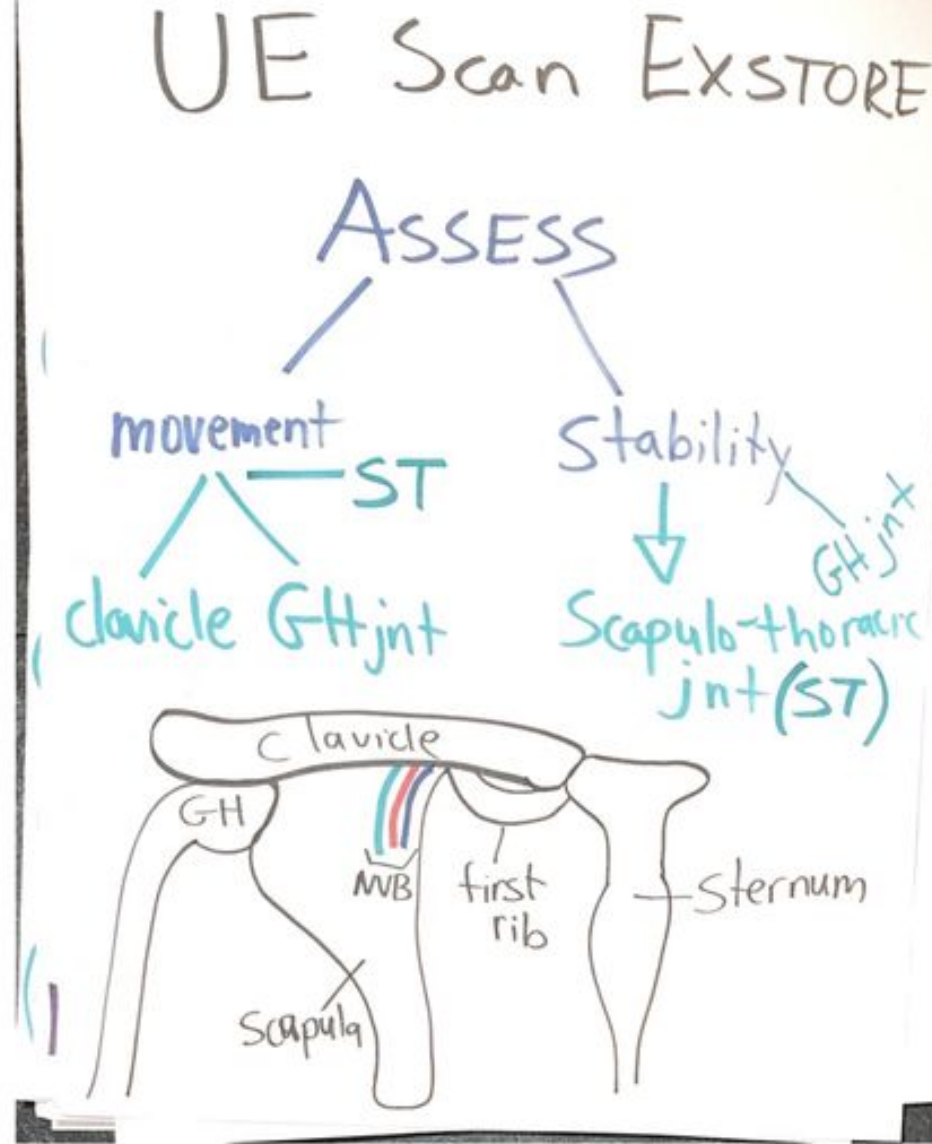
- GO THROUGH VISIT 2 STEPS
- CONTINUE IMPROVING SOFT TISSUE USING *RENOVATION, PERFUSION, AND MANUAL TECHNIQUES*
- MECHANICAL TREATMENT LASTS 2X PER WEEK FOR 3 WEEKS
- CHRONIC SYSTEMIC TREATMENT LAST 2X PER WEEK FOR 4 WEEKS

EXSTORE ASSESSMENT (10)

BREAK 5 MINS

EXSTORE UPPER BODY SCAN

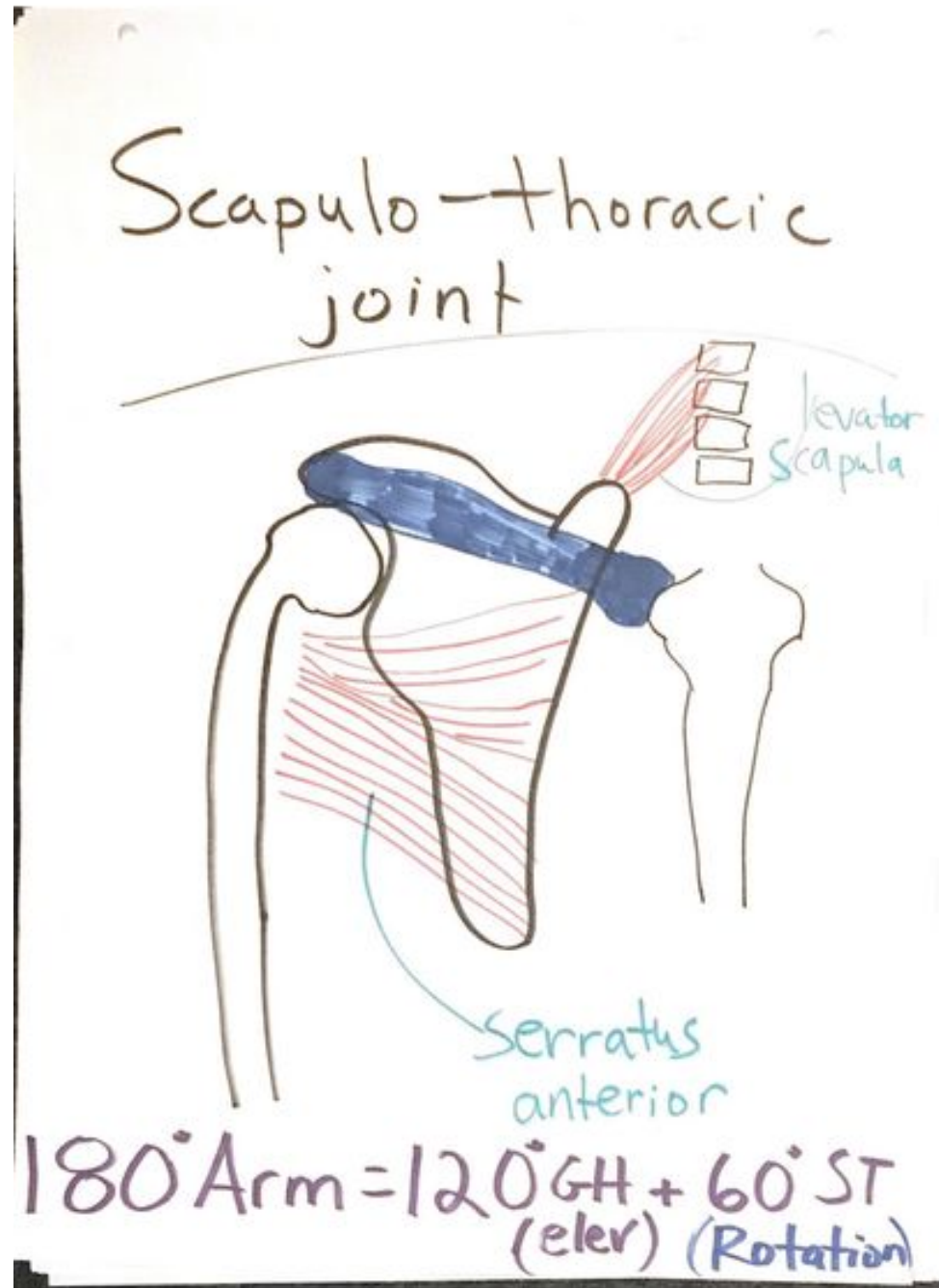
EXSTORE: UPPER EXTREMITY SCAN



CERVICAL SPINE ROTATION



THE SCAPULO- THORACIC JOINT



GLENOHUMERAL & SCAPULOTHORACIC ROM

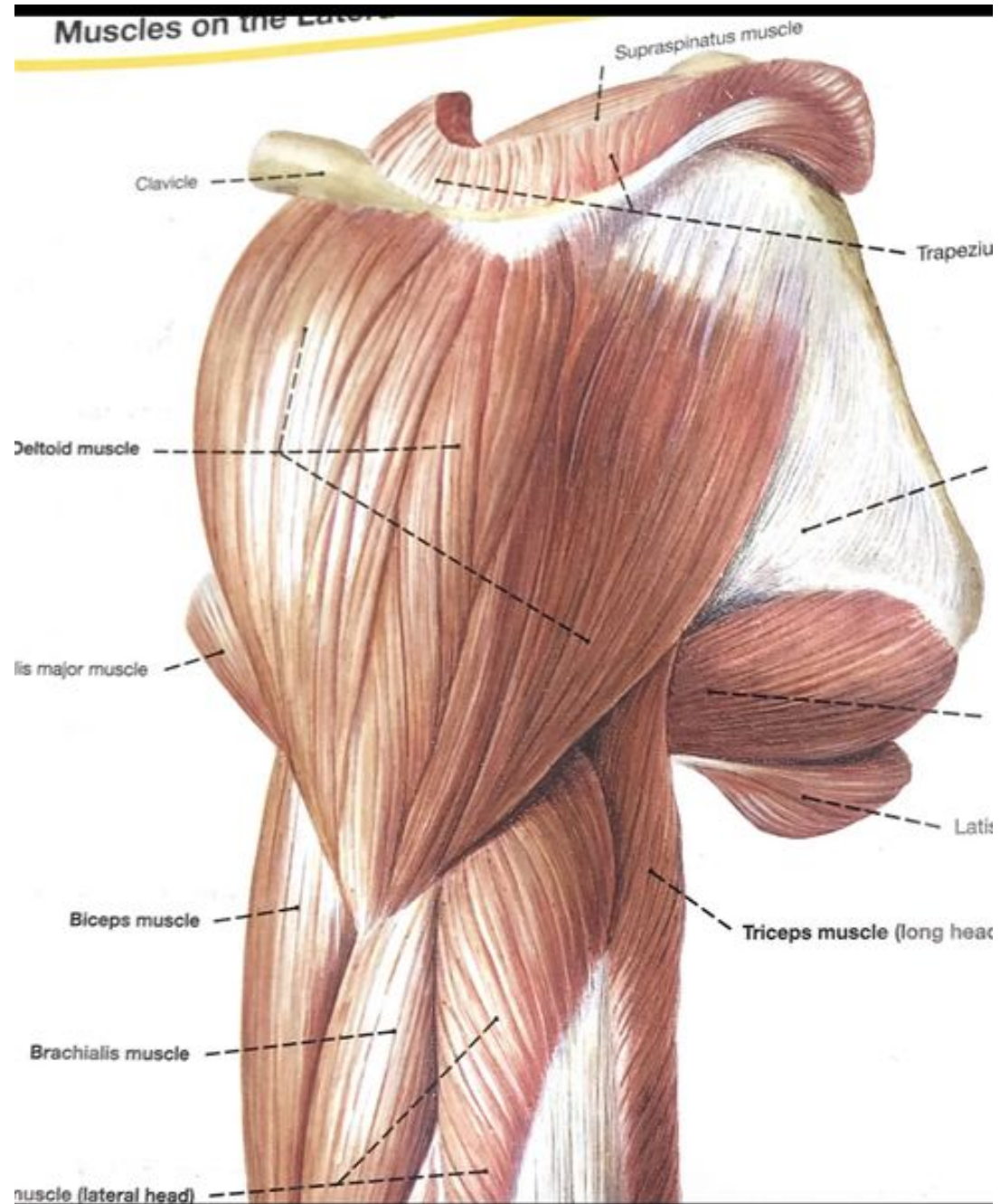


MUSCLE TESTING: DEFINED

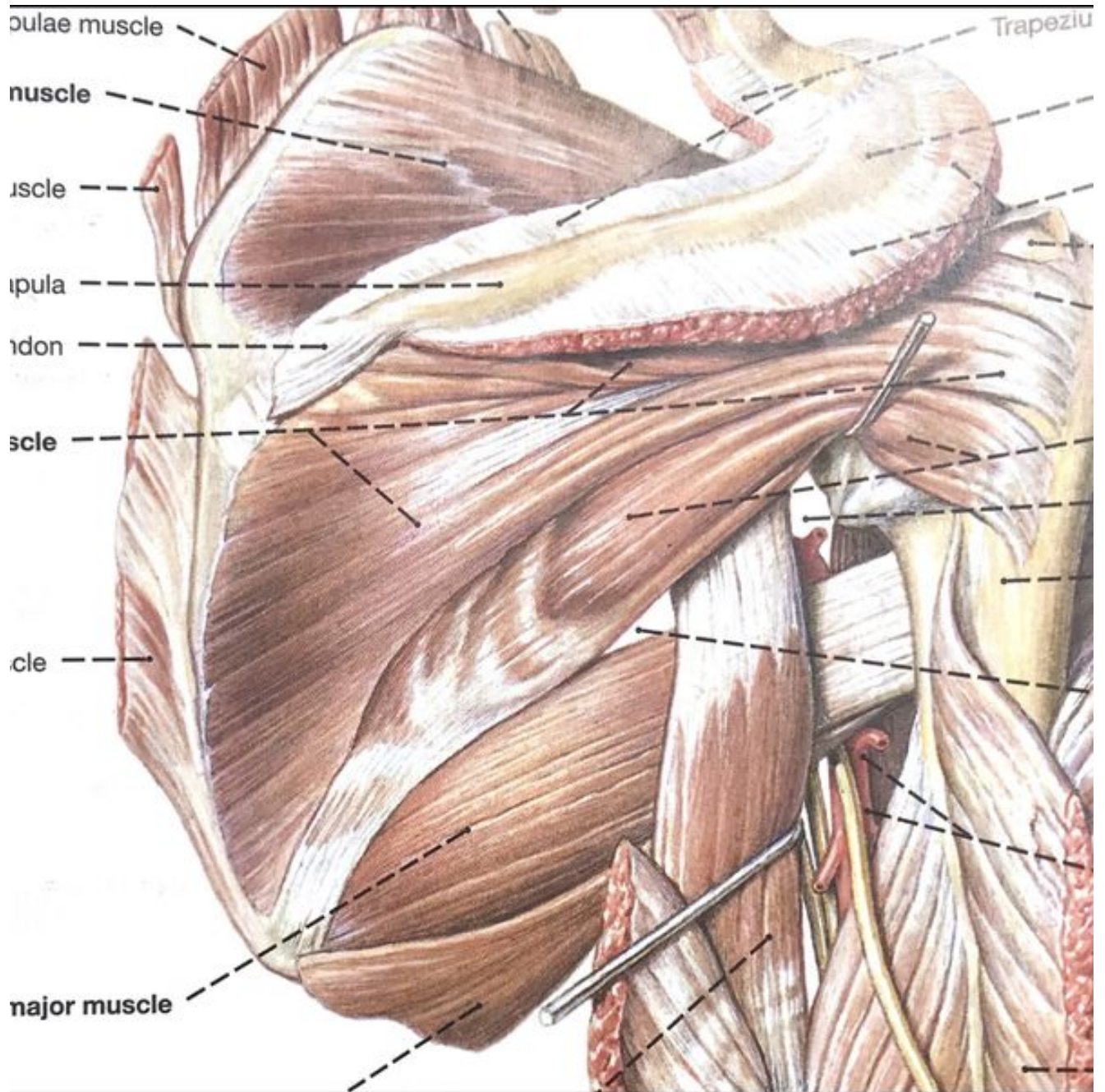
Muscle Testing

- Patient initiated
 - cue patient to resist FIRST
- Pressure
 - meet resistive force
- Duration
 - 3 to 5 sec max inhibited muscles

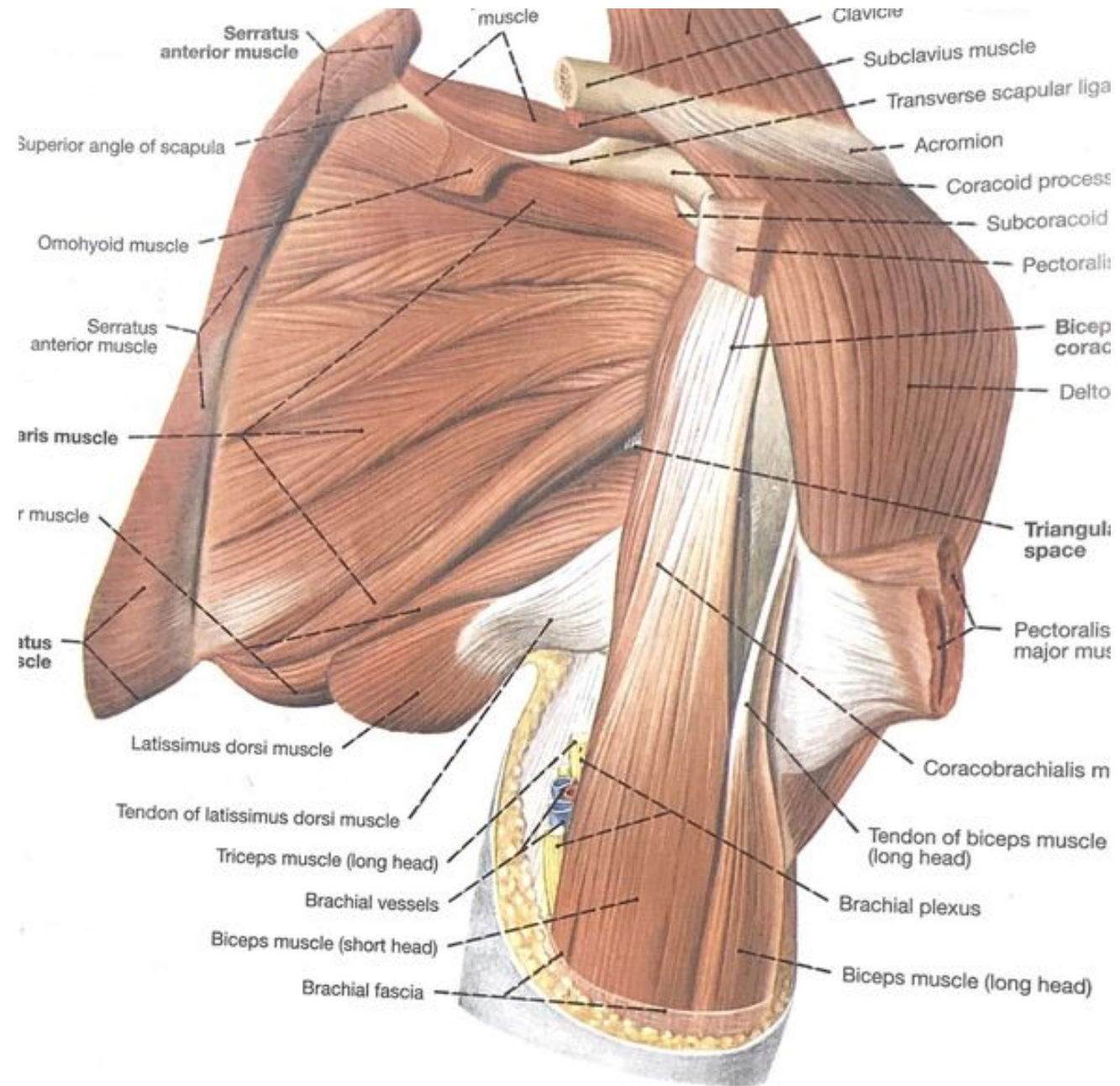
THE DELTOID: ANTERIOR/MIDDLE/ POSTERIOR



EXTERNAL ROTATORS: INFRASPINATUS/ TERES MINOR

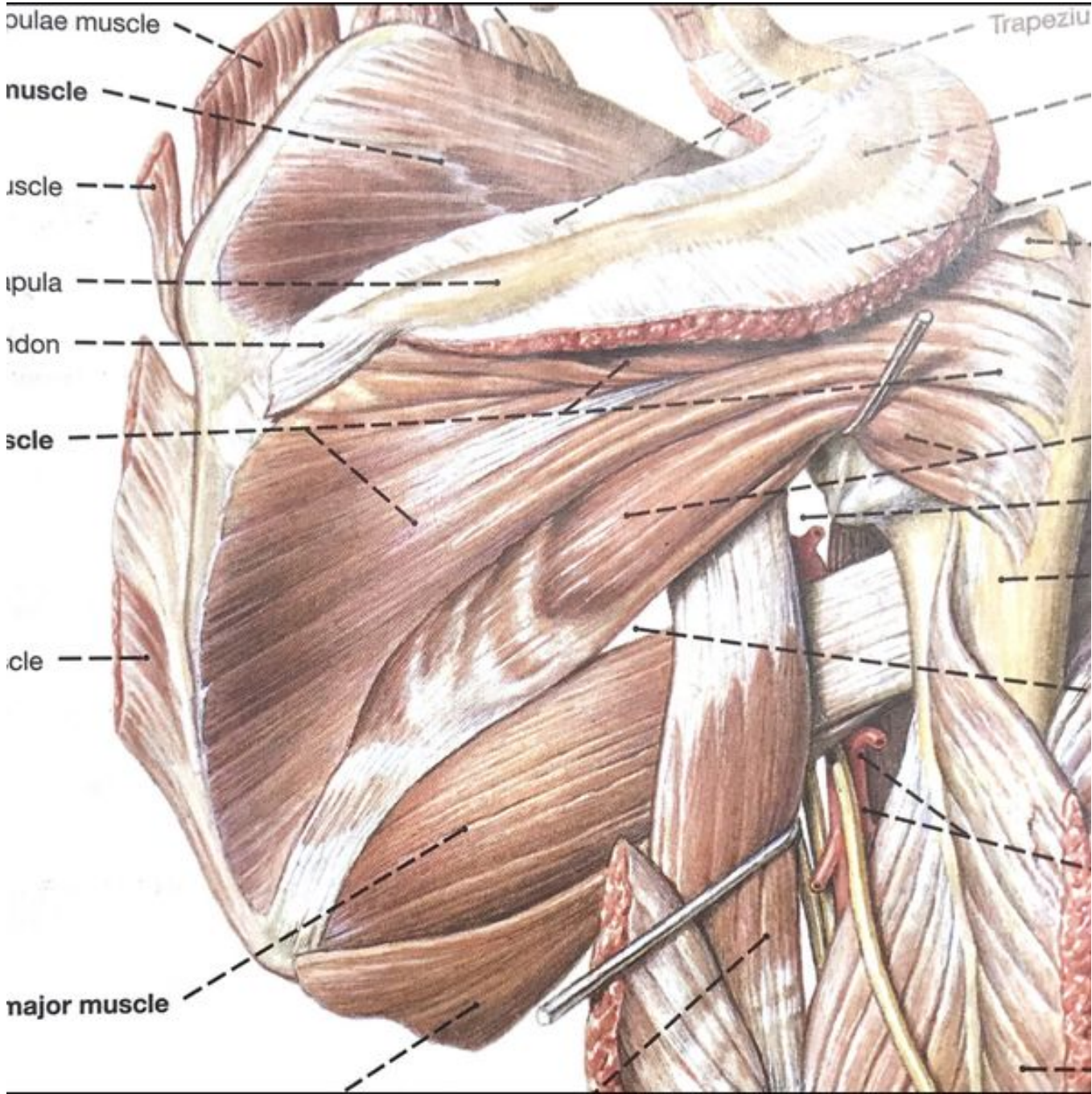


INTERNAL ROTATORS: SUBSCAPULARIS, TERES MAJOR



Ventral Aspect of the Shoulder (Left)

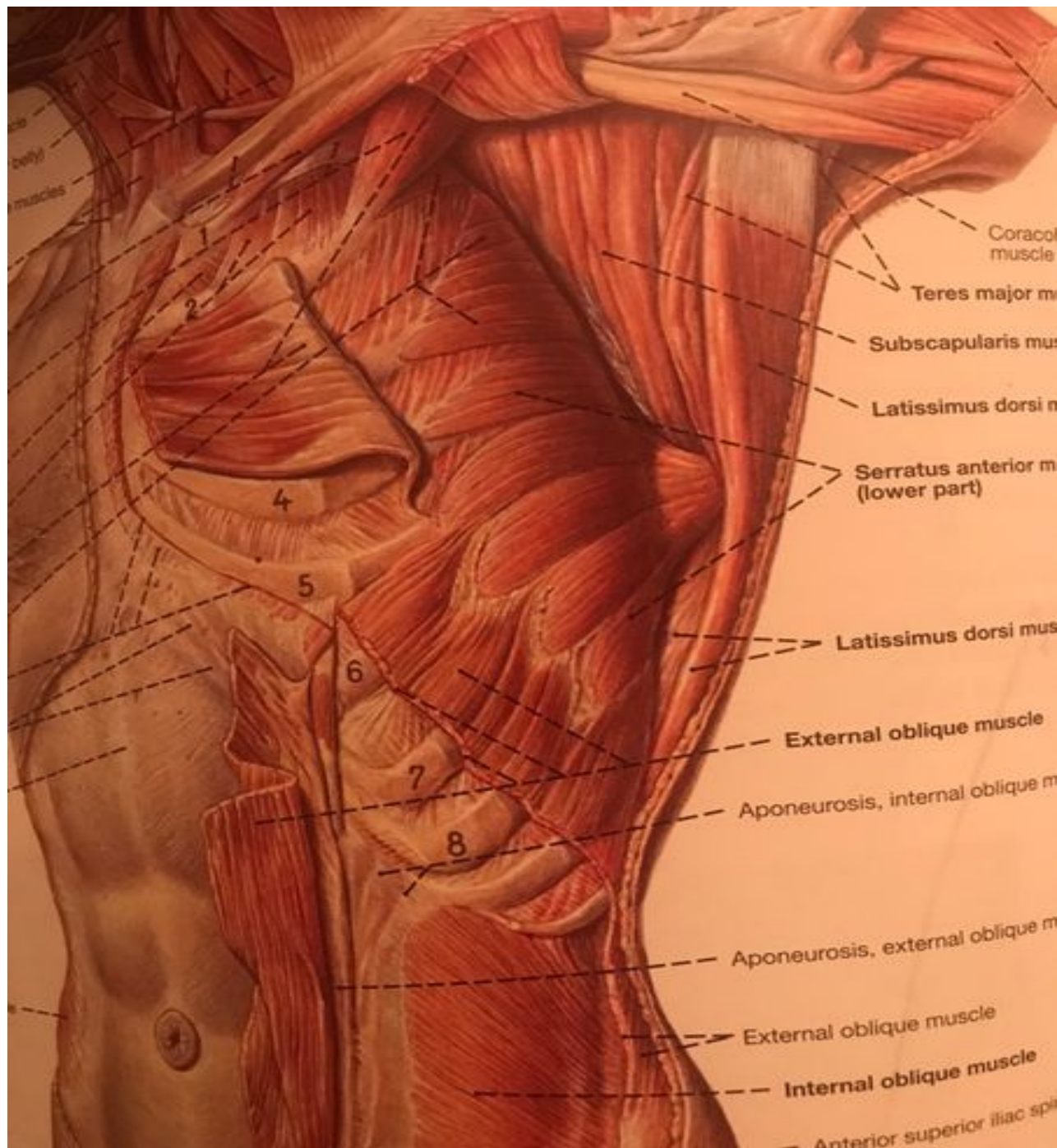
SUPRASPINATUS



www.acuvids.com
www.acupuncturemotorpoints.com

SERRATUS
ANTERIOR:
SCAPULAR STABILITY





CLINICAL TRENDS & TENDENCIES

CLINICAL TRENDS

- ankle: TFL, gluteus medius
- Knee: TFL, gluteus medius
- hip: obliques, gluteus minimus
- Low back: obliques, gluteus med/max
- Neck: serratus anterior,
clavicle
- Shoulder/UE: serratus anterior,
clavicle

EXSTORE CHECKLIST

EXSTORE[®] Exam Sheet

UPPER EXTREMITY SCAN

ROM

C-Spine
GH joint
ST joint

STABILITY TESTING

Anterior Deltoidok
Middle Deltoidok
Posterior Deltoidok
External Rotator of
GH jointok
Internal Rotator of
GH jointok
Supraspinatusok
Stability of ST jointok
(via serratus anterior)

FUNCTIONAL TESTING

ADL's
Pushup
Wall Test
Other

LOWER EXTREMITY SCAN

ROM

L-Spine
Hip
SLR

STABILITY TESTING

Hip Flexorsok
TFLok
Gluteus Mediusok
(Ant.)
Adductorsok
Gluteus Min.ok
Gluteus Max.ok
Obliquesok
(standing)

FUNCTIONAL TESTING

Squat
Gait
ADL's
Other

LOWER BODY SCAN

DYNAMIC GAIT ANALYSIS: ASYMMETRY, ARM SWING/STRIDE, TEMPO



EXSTORE: LOWER EXTREMITY - MOVEMENT

LE Scan EXSTORE

Movement:

① L-spine seated ROM

② Passive Hip ROM
- Flexion, IR/ER

③ SLR
- non orthopedic

EXSTORE: LOWER EXTREMITY - STABILITY

LE Scan EXSTORE

Stability:

① Hip flexors

psoas

iliacus

pectineus

② Abductors

TFL

Glut Med

Glut Min

③ Adductors

Longus/Brevis (5°)

Magnus (30°)

④ Extensors

glut MAX

⑤ Obliques

IO

EO

LOWER SCAN: LUMBAR SPINE ROTATION



ROTATION
OCCURS AT
T10-T11



LUMBAR MOVEMENT

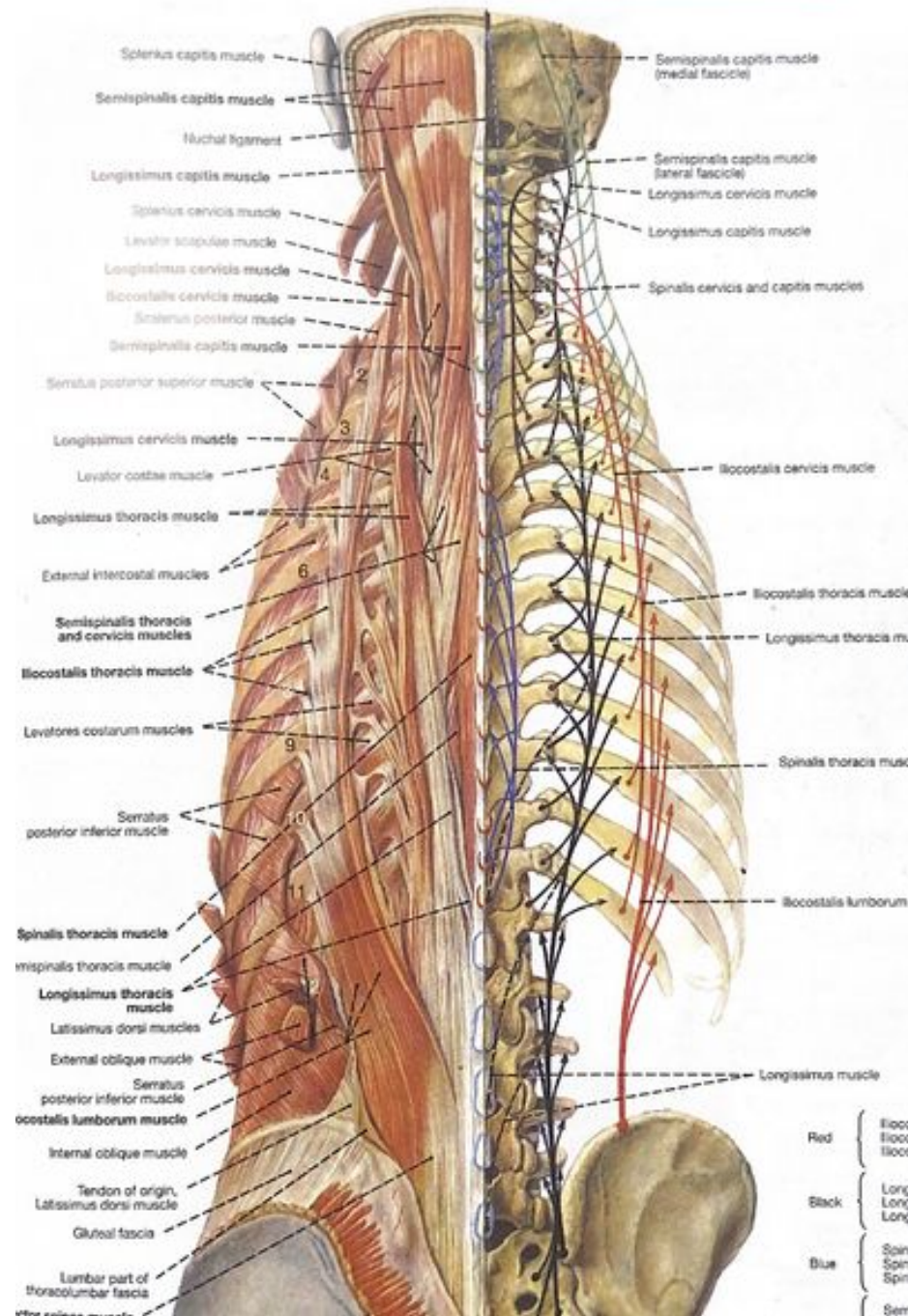
THORACIC ROTATION 30-35 DEG

FLEXION: 50

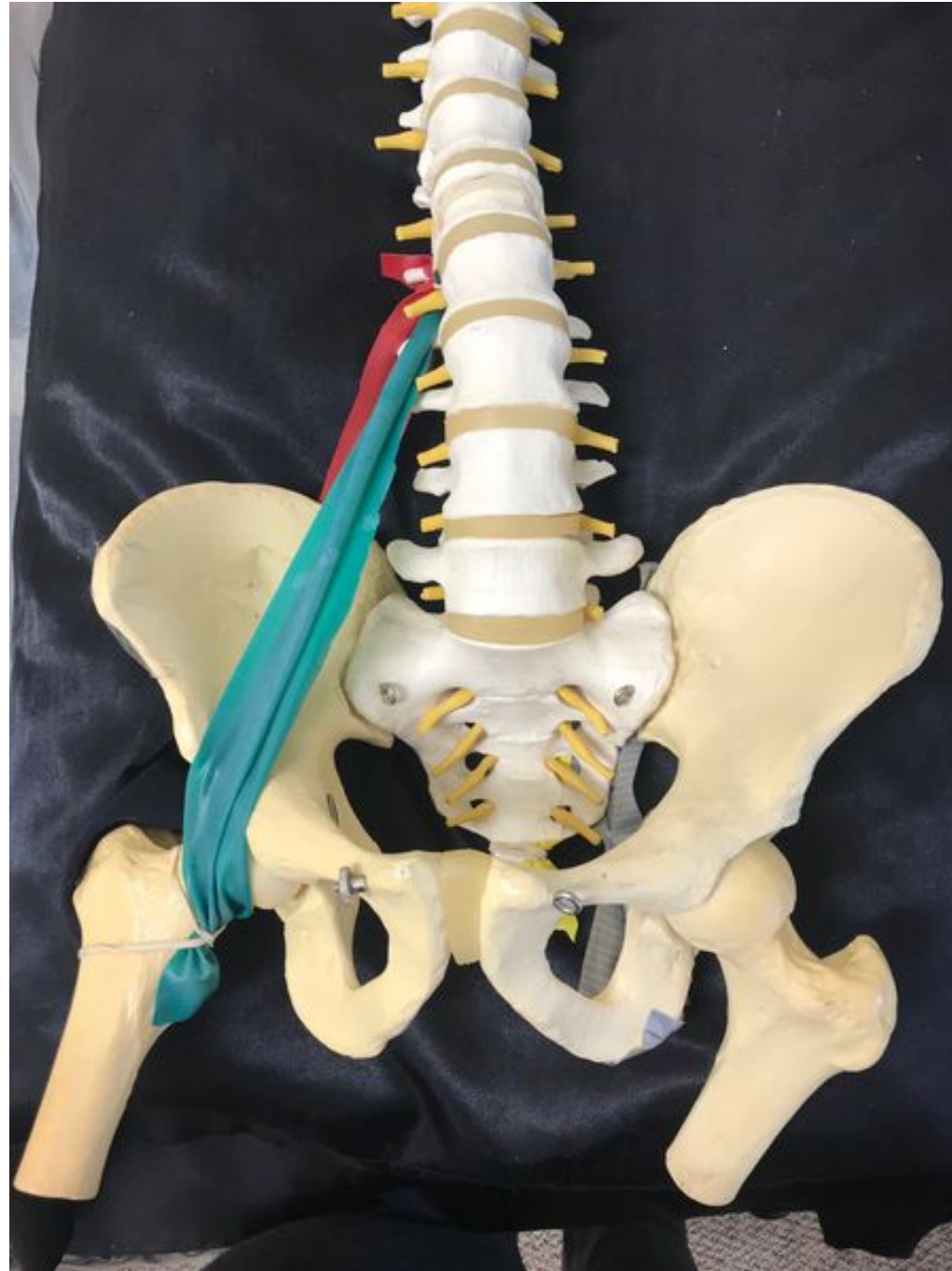
EXTENSION 25

LATERAL BENDING 25

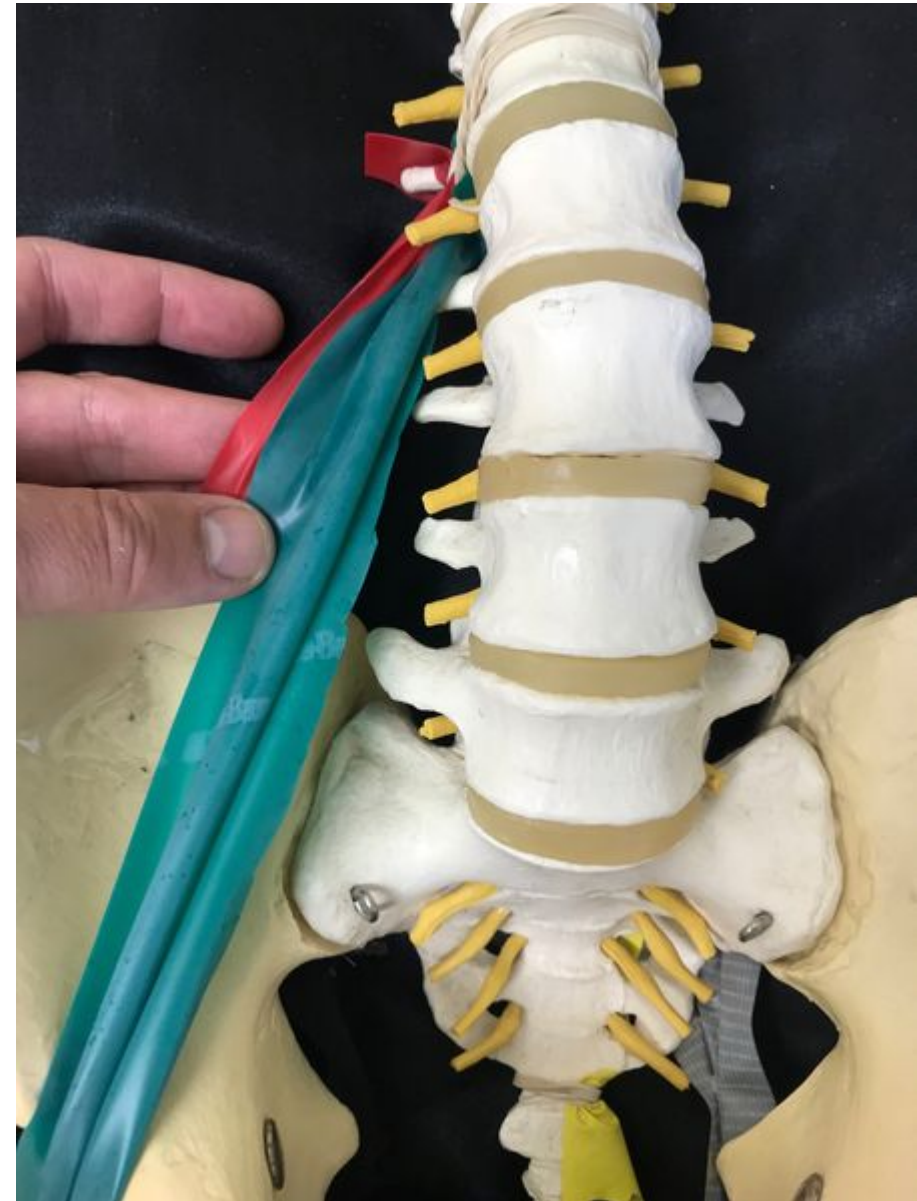
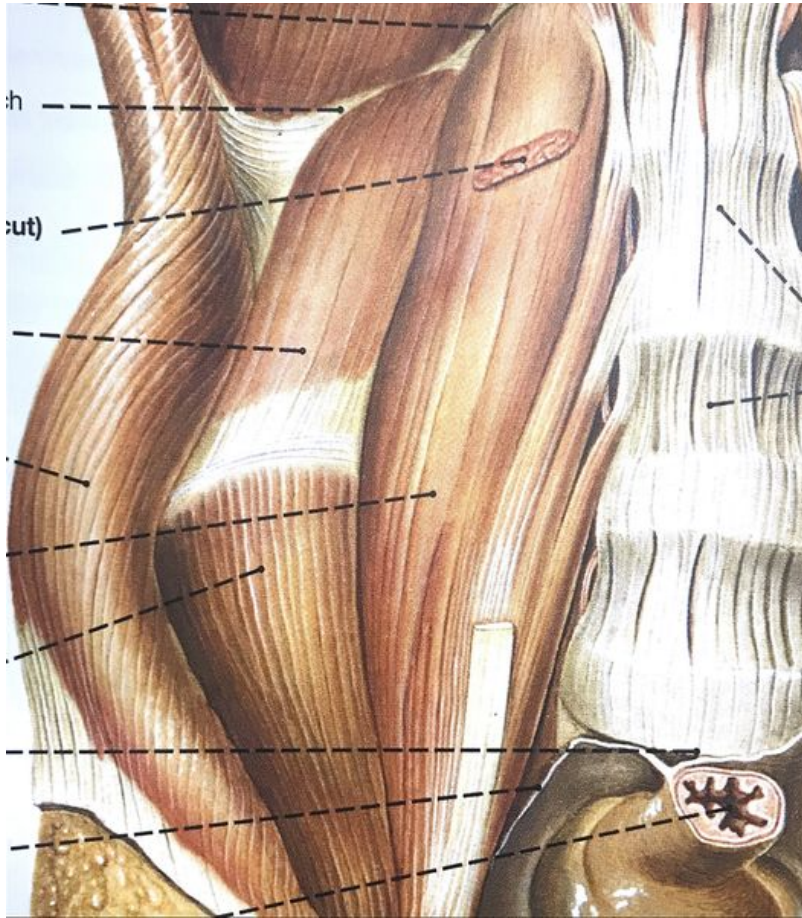
ALL ROTATION TO COME FROM THORACIC SPINE



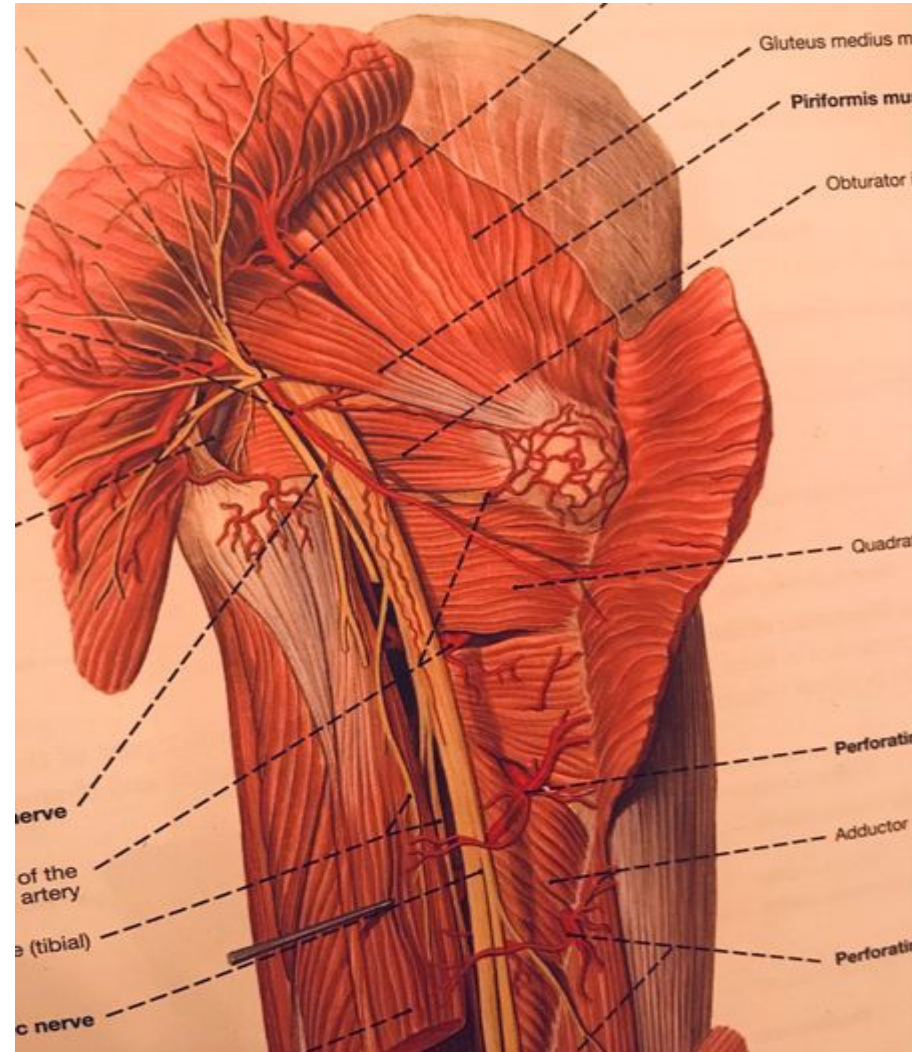
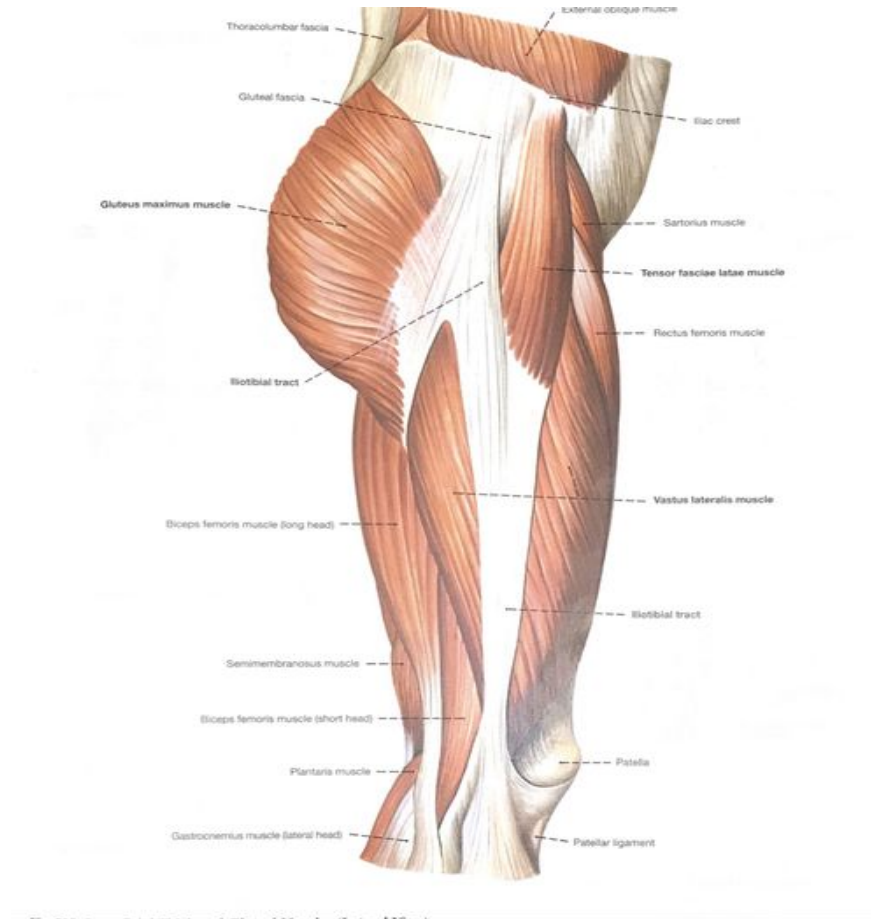
LOWER SCAN: HIP ROM



HIP FLEXORS & PSOAS

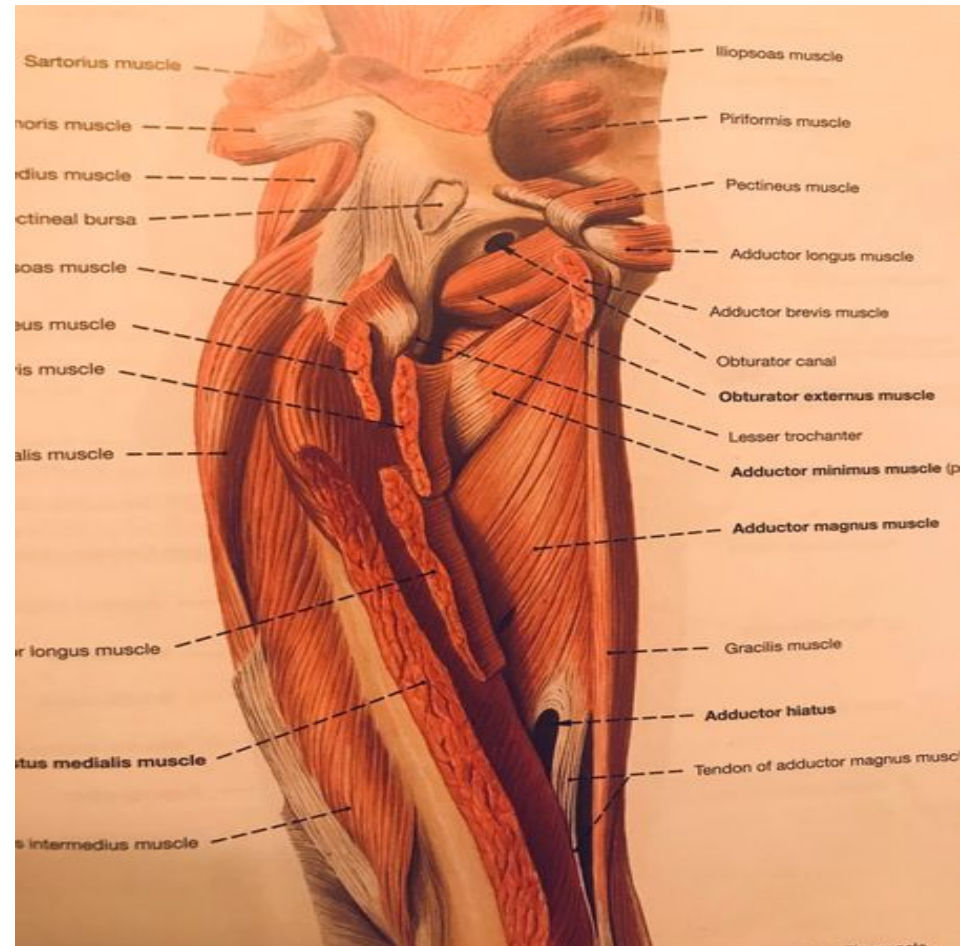
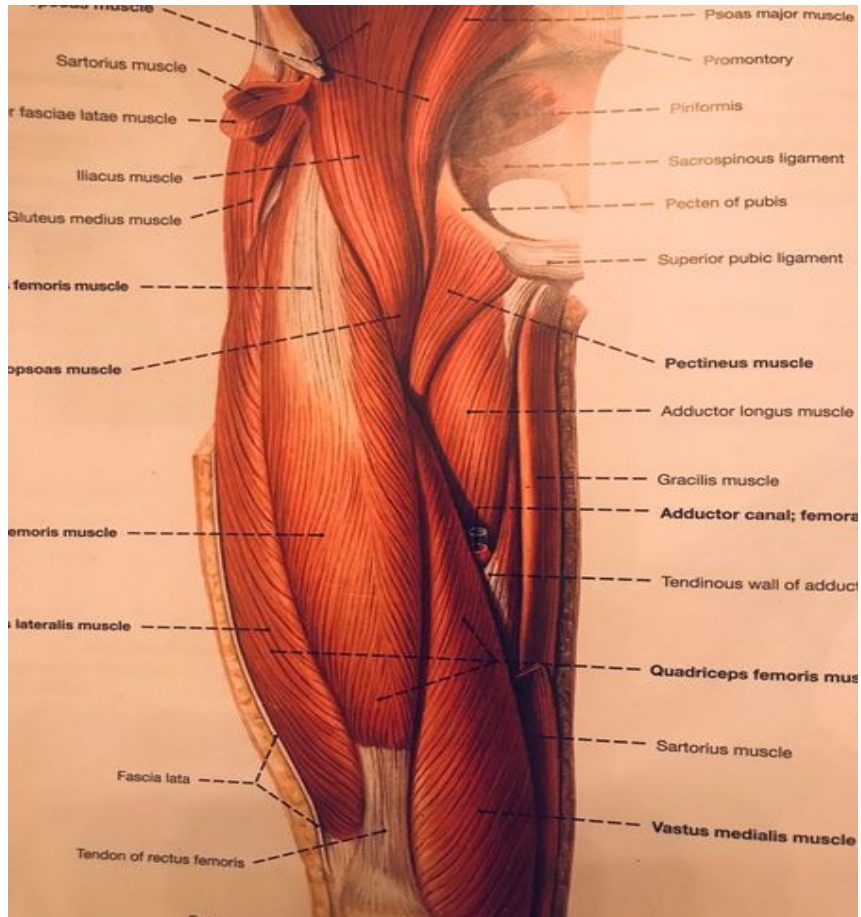


ABDUCTORS: TFL, ANT GLUTEUS MEDIUS

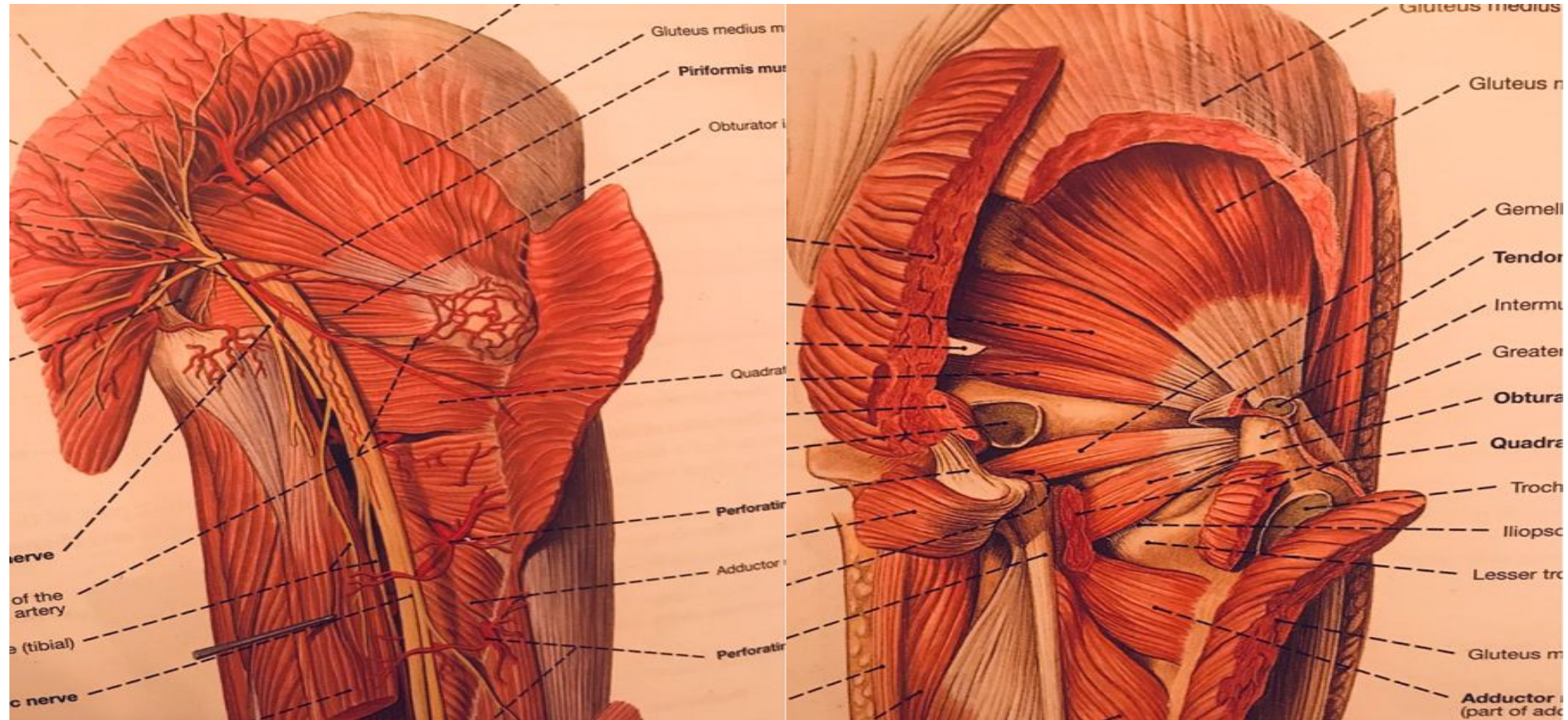


ADDUCTORS:

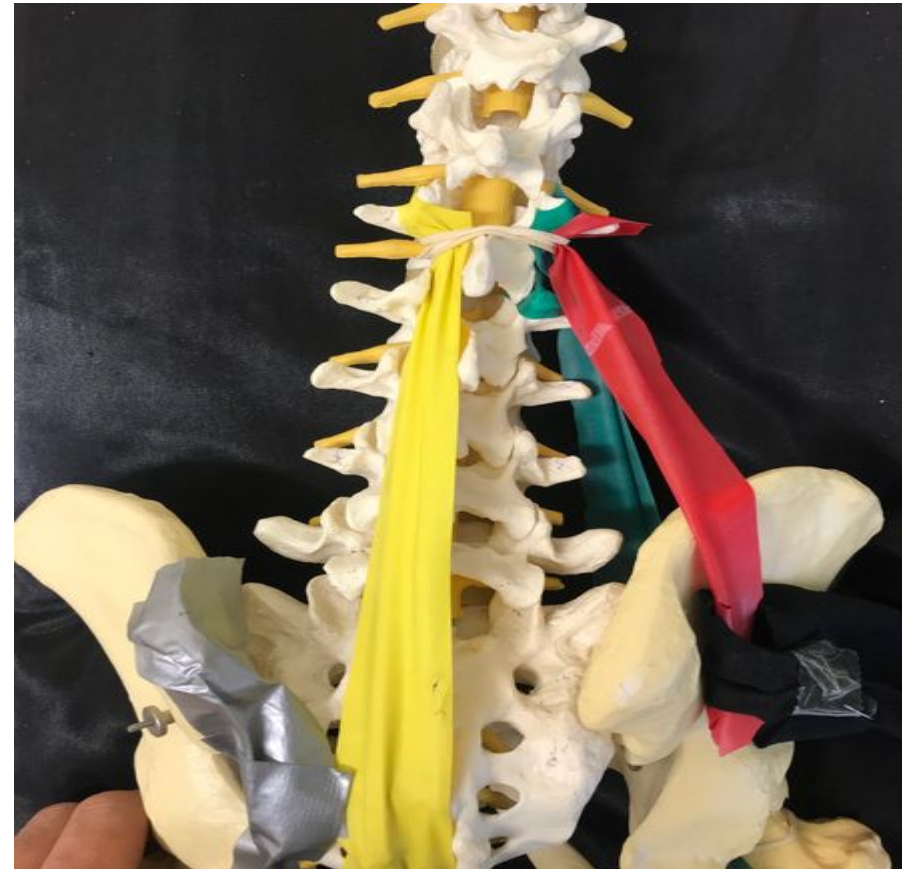
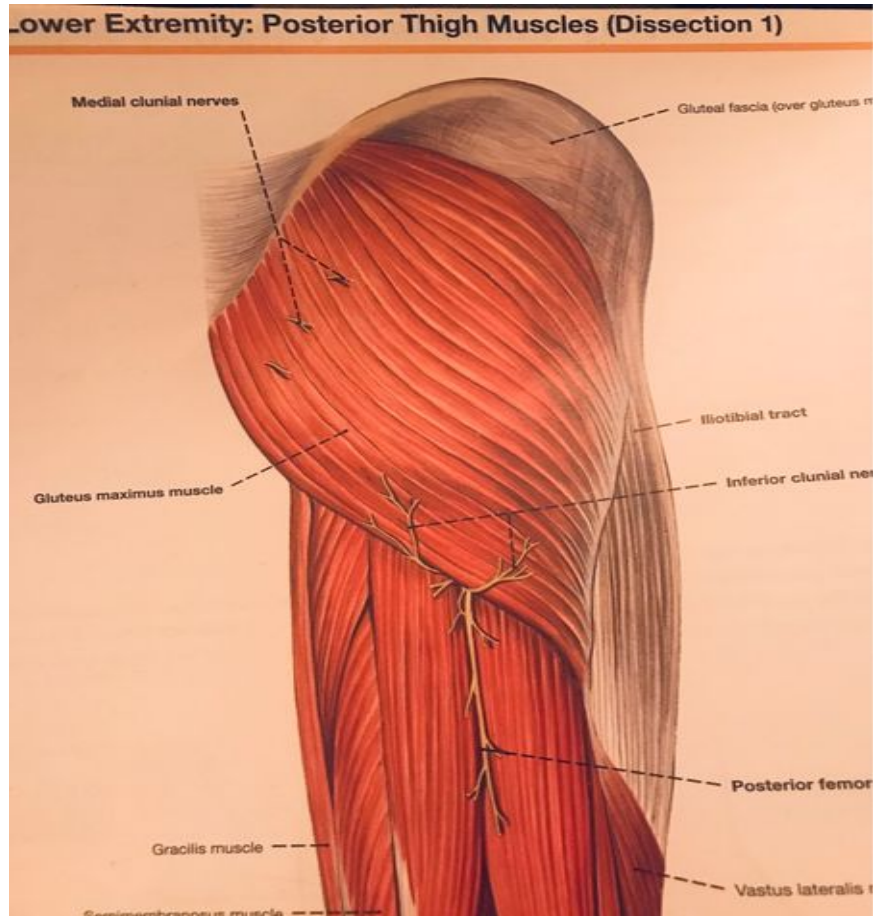
ADDUCTOR LONGUS/BREVIS, MAGNUS



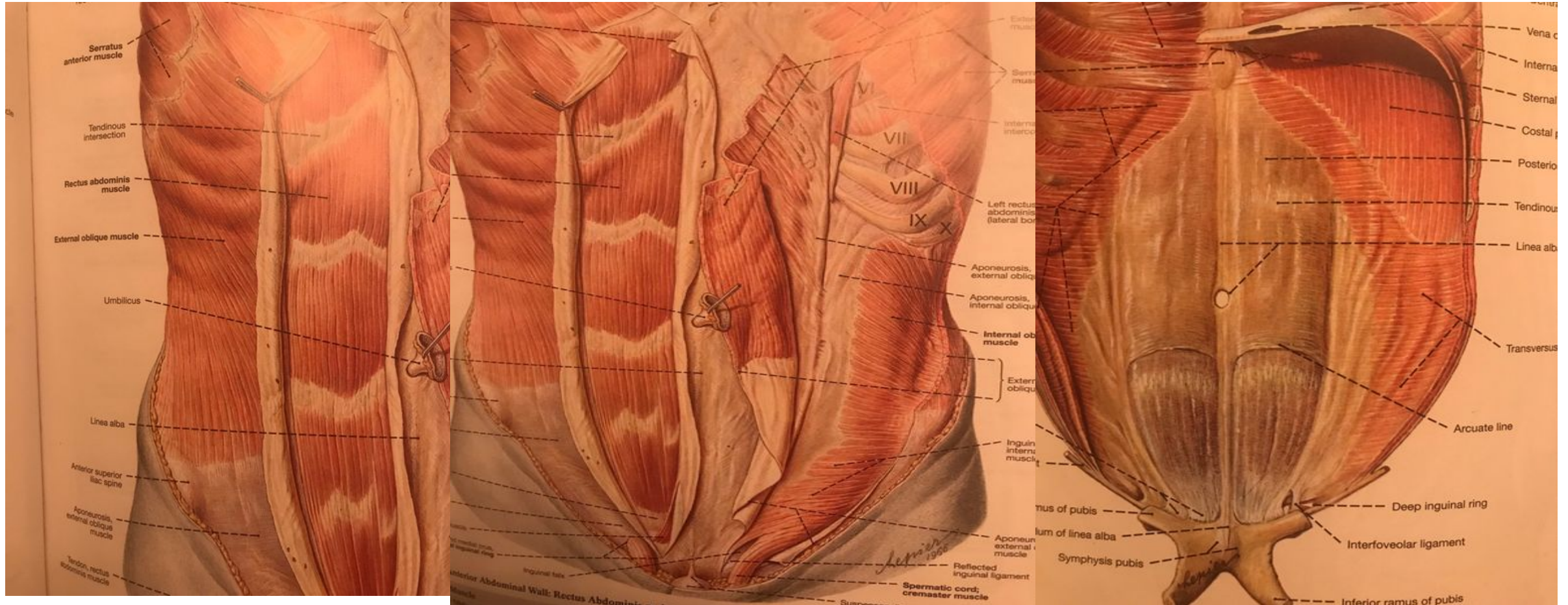
SIDE LAYING ABDUCTORS: GLUTEUS MINIMUS, POST GLUTEUS MEDIUS



HIP EXTENSOR: GLUTEUS MAXIMUS



CORE STABILIZATION: INTERNAL/EXTERNAL OBLIQUES



TVA AND MULTIFIDUS

- IF THE TRANSVERSE ABDOMINUS CANNOT CONTRACT THEN NEITHER CAN THE MULTIFIDUS
- THEREFORE, A FIRING TVA IS NEEDED FOR THE MULTIFIDUS TO CONTRACT.

× +

ed.ncbi.nlm.nih.gov/21641268/

Comparative Study > Man Ther. 2011 Dec;16(6):573-7. doi: 10.1016/j.math.2011.05.007. Epub 2011 Jun 8.

The relationship of transversus abdominis and lumbar multifidus clinical muscle tests in patients with chronic low back pain

Julie Hides ¹, Warren Stanton, M Dilani Mendis, Margot Sexton

Affiliations + expand
PMID: 21641268 DOI: 10.1016/j.math.2011.05.007

Abstract

Introduction: Previous research of transversus abdominis (TrA) and multifidus muscle function in the presence of chronic low back pain (LBP) has investigated these muscles in isolation. In clinical practice, it is assumed that a relationship exists between these muscles and so they are often assessed and rehabilitated together. However, no studies have tested or documented this association. This study aimed to examine the relationships between clinical muscle testing and other measures taken in the course of a clinical assessment at a back clinic.

Methods: This retrospective chart audit examined the files of 82 patients (40 Males, 42 Females) for results of clinical tests of TrA and multifidus muscle contraction, multifidus muscle size measurements and other clinical measures such as distribution of pain and pain on manual examination.

Results: The ability to contract multifidus was related to the ability to contract TrA with the odds of a good contraction of multifidus being 4.5 times higher for patients who had a good contraction of TrA. A poor ability to contract multifidus was related to poor TrA contraction. Patients with unilateral LBP had more multifidus muscle asymmetry (11.6%) than those with bilateral/central pain (0.01%) and had a poor multifidus contraction on the affected side ($p < 0.01$). No other significant relationships were

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CLINICAL TRENDS & TENDENCIES

CLINICAL TRENDS

- ankle: TFL, gluteus medius
- Knee: TFL, gluteus medius
- hip: obliques, gluteus minimus
- Low back: obliques, gluteus med/max
- Neck: serratus anterior, clavicle
- Shoulder/UE: serratus anterior, clavicle

EXSTORE LOWER EXTREMITY CHECKLIST

EXSTORE[®] Exam Sheet

UPPER EXTREMITY SCAN

ROM

C-Spine

GH joint

ST joint.....

STABILITY TESTING

Anterior Deltoidok

Middle Deltoidok

Posterior Deltoidok

External Rotator of
GH jointok

Internal Rotator of
GH jointok

Supraspinatusok

Stability of ST joint.....ok

(via serratus anterior)

FUNCTIONAL TESTING

ADL's

Pushup.....

Wall Test.....

Other

LOWER EXTREMITY SCAN

ROM

L-Spine.....

Hip.....

SLR

STABILITY TESTING

Hip Flexors.....ok

TFL.....ok

Gluteus Mediusok

(Ant.)

Adductorsok

Gluteus Min.ok

Gluteus Max.....ok

Obliquesok

(standing)

FUNCTIONAL TESTING

Squat

Gait

ADL's

Other

RE-VISITING TREATMENT PLAN

VISIT 1

- FOCUSED HISTORY
- ASSESSMENT:
 - EXSTORE IF MECHANICAL
 - PALPATION IF CHRONIC SYSTEMIC
- CORRECT INHIBITIONS/BEGIN SYSTEMIC TREATMENT
- MANUAL THERAPY MAY BE LOCALLY TO IMPROVE SOFT TISSUE HEALTH AND IMPROVE ROM.

VISIT 2

- RE-ASSESS EXSTORE, ROM ETC
- CORRECT INHIBITIONS IF A MECHANICAL PRESENTATION
- TREAT LOCAL AREA OF TIGHT BANDS/ADHESIONS WITH *RENOVATION TECHNIQUES*
- IF CHRONIC SYSTEMIC CONTINUE THAT TREATMENT (PERFUSION, AURICULAR, DISTAL)
- BEGIN MANUAL THERAPY LOCALLY TO IMPROVE SOFT TISSUE HEALTH AND IMPROVE ROM.

VISIT 3 AND BEYOND

- GO THROUGH VISIT 2 STEPS
- CONTINUE IMPROVING SOFT TISSUE USING *RENOVATION, PERFUSION, AND MANUAL TECHNIQUES*
- MECHANICAL TREATMENT LASTS 2X PER WEEK FOR 3 WEEKS
- CHRONIC SYSTEMIC TREATMENT LAST 2X PER WEEK FOR 4 WEEKS

BLOODWORK

WHEN TO ORDER BLOODWORK AND WHY?

- NOT RESPONDING TO TREATMENT
- NEUROPATHIC SIGNS/SYMPTOMS
- PAIN IN MULTIPLE JOINTS/REGIONS
- PREDOMINANT PAIN IN STIFFNESS IN THE MORNING IN AGE 25-40
- TWO OF THESE WITH FAMILY HISTORY OF DIABETES OR INFLAM ARTH
- TWO CHRONIC SYSTEMIC HISTORY INDICATORS PLUS ONE OF THE ABOVE

BLOOD TEST MARKERS

- **ESR (ERYTHROCYTE SEDIMENTATION RATE):** MEASURES THE LEVEL OF INFLAMMATION IN THE BODY. IT IS NON-SPECIFIC AND COULD BE ELEVATED FOR MANY REASONS.
- **C-REACTIVE PROTEIN (CRP):** MEASURE THE LEVEL OF INFLAMMATION IN THE BODY BUT CAN BE DUE TO HEART DISEASE, CANCERS, INFECTIONS, AUTOIMMUNE DISEASES ETC
- **RHEUMATOID FACTOR (RF):** A POSITIVE TEST INDICATES AN ASSOCIATION WITH AUTOIMMUNE DISEASES, IN PARTICULAR RHEUMATOID ARTHRITIS

BLOOD TEST MARKERS

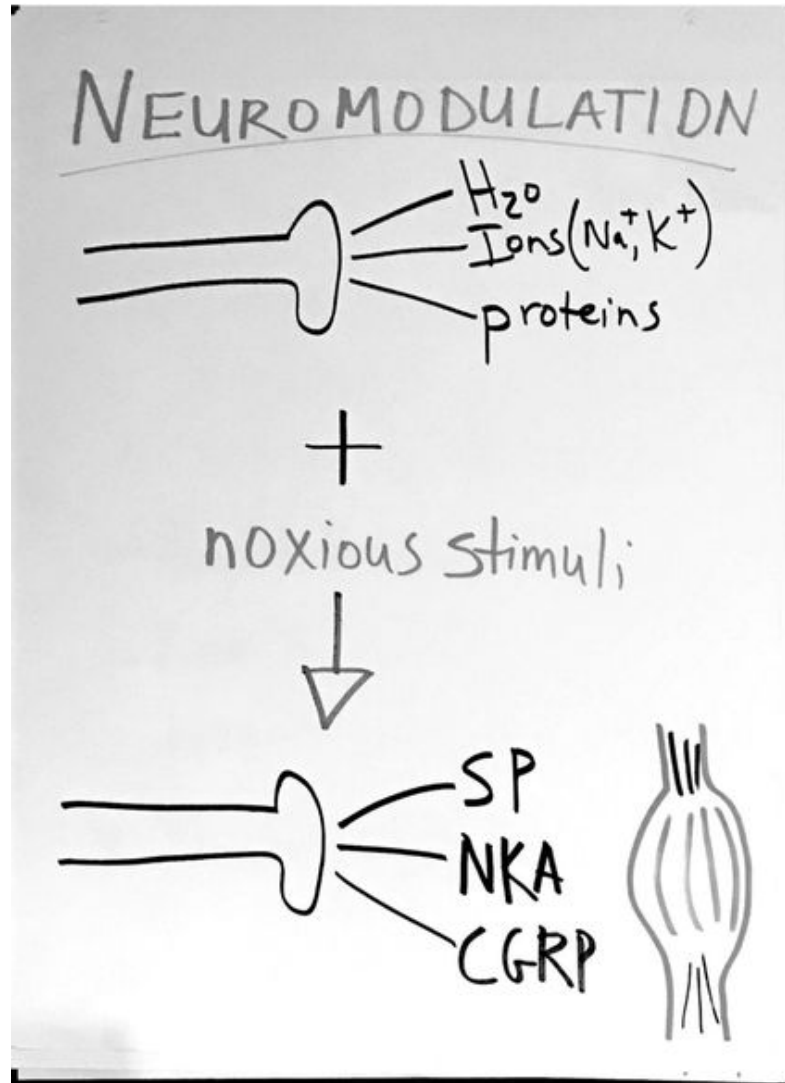
- **ANTI-CCP (ANTI-CYCLIC CITRULLINATED PEPTIDE ANTIBODY):** COMMONLY IN RA PATIENTS. USEFUL FOR DETERMINING EARLY AND/OR BORDERLINE CASES OF RA. A STRONGER INDICATOR THAN RF FOR RA.
- **ANA (ANTINUCLEAR ANTIBODY):** THIS IS USED TO SCREEN AUTOIMMUNE DISORDERS. ALMOST 100% POSITIVE IN SLE PATIENTS CAN BE POSITIVE FOR OTHER CONDITIONS.
- **ANTI-dsDNA:** VERY SPECIFIC TO SLE. ALSO SEEN IN RA AND AUTOIMMUNE HEPATITIS.

BLOOD TEST MARKERS

- **HLA (HUMAN LEUKOCYTE ANTIGEN): genetic marker –**
 - SPECIFICALLY HLA-B27. POSITIVE IN SPONDYLOARTHROPATHIES, IE ANKYLOSING SPONDYLITIS, SOMETIMES PSORIATIC ARTHRITIS, AND IN REACTIVE ARTHRITIS.
- **URIC ACID: GOUT**
- ***WHAT TESTS SHOULD YOU ORDER IF YOU SUSPECT INFLAMMATORY JOINT ARTHRITIS/NOT RESPONDING:***
 - **ESR, CRP** TO ESTABLISH LEVEL OF INFLAMMATION
 - **RF, ANA, HLA-B27** TO DETERMINE AUTOIMMUNE DISEASE

NEUROMODULATION LECTURE

NEUROGENIC INFLAMMATION & NEUROMODULATION



Effect of Neurogenic Inflamm

① Neurosensitivity (PAIN)

② ADHESION formation

- tight bands

- knots

- trigger points

- * Motor inhibition

STAGES OF SOFT TISSUE REPAIR

Neuroplastic Changes + Soft tissue Healing

- 0-72 hrs

Accum inflamm cells → bradykinin release
(WBC, macrophages) Swelling

- 72 hr - 6 wks

- collagen repair laid @ site

- 3 wks - 6 mos

- collagen remodelling @ site

* cross-over @ 3-6 wks

Reversing ADHESIONS

- non-noxious stimulus
 - acupuncture/EA
 - manual treatment



- mech/thermal stim
- release neurotransmitters
 - GABA, dopamine, glutamate
- **STOP** noxious stim → BRAIN

TISSUE REMODELLING: SOFT TISSUE WORK

- In the context of tendon injury and repair, it is recognized that controlled mobilization of healing tendons is needed to improve outcomes.
- Thomopoulos et al., 2003 it is well accepted that healing tissues should be loaded in a controlled manner to promote favorable remodeling and functional outcomes

TISSUE REGENERATION – WITH ELECTROACUPUNCTURE

- Huang WZ. Electroacupuncture combined with rehabilitation training to combat ACT reconstruction clinical studies of postoperative quadriceps atrophy [D]. Guangzhou University of Traditional Chinese Medicine.

Fujian Provincial Research Institution of Traditional Chinese Medicine conclude that acupuncture reduces myocyte (muscle cell) apoptosis while promoting the proliferation and differentiation of muscle satellite cells. Satellite cells help to repair and regenerate muscle fibers.

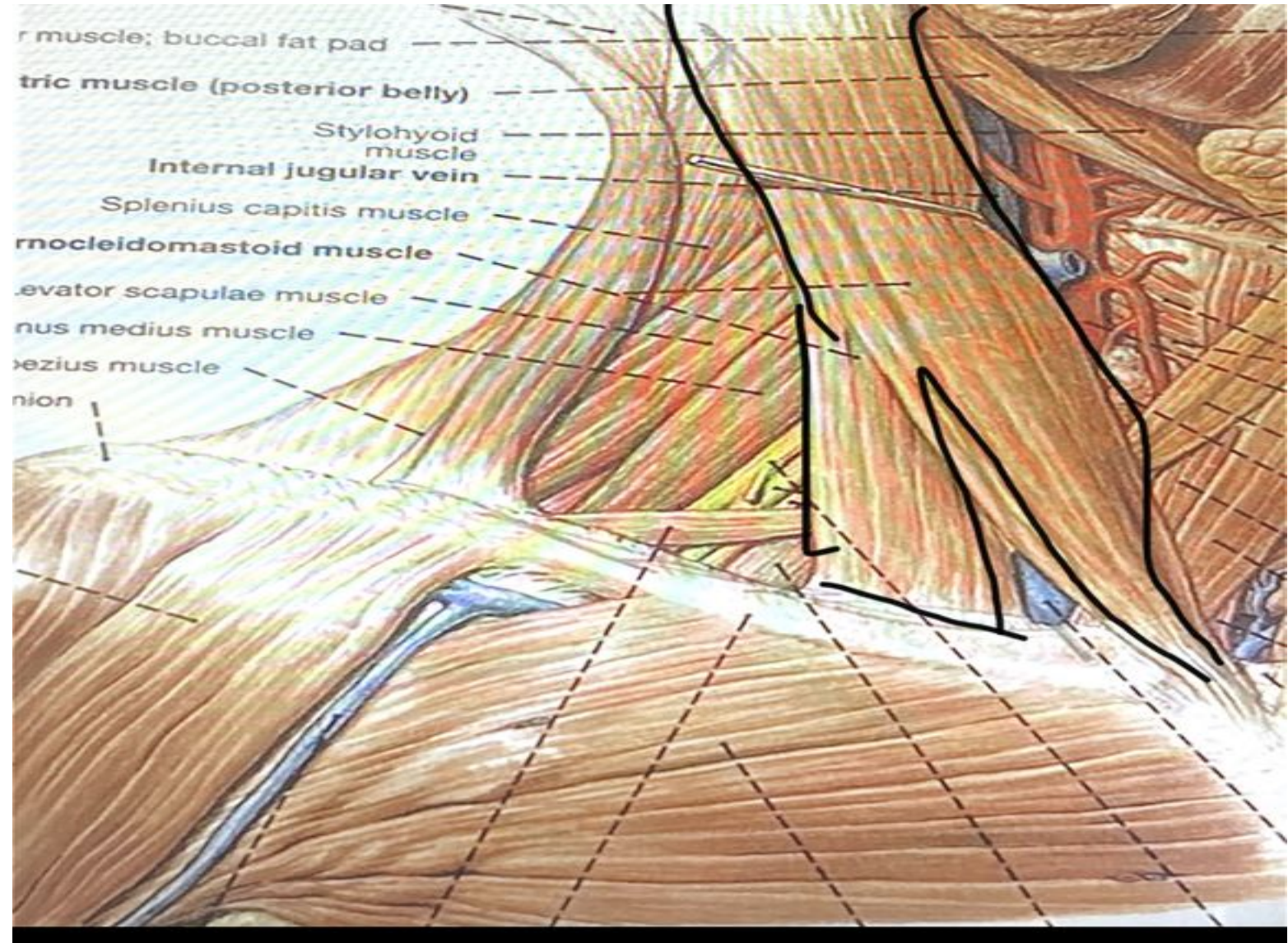
QUICKSTART – GETTING A JUMP

QUICKSTART: SOFT TISSUE INTRODUCTION

Quickstart Technique

- cervical plexus (neck)
- Side laying upper extremity
- side laying low back
- hip (TFL, glut med)
- Knee (vmo)

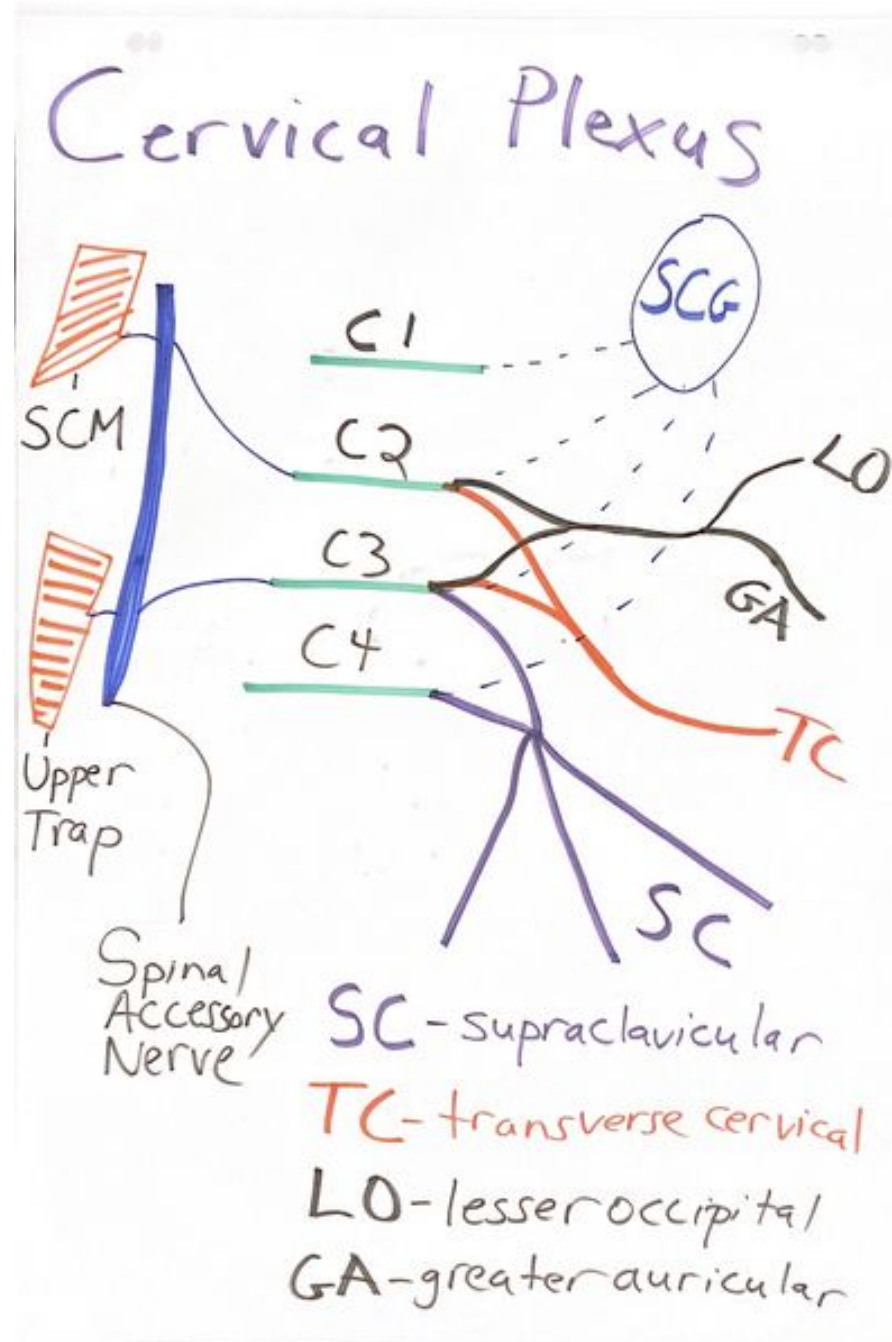
LOCATING THE CERVICAL PLEXUS



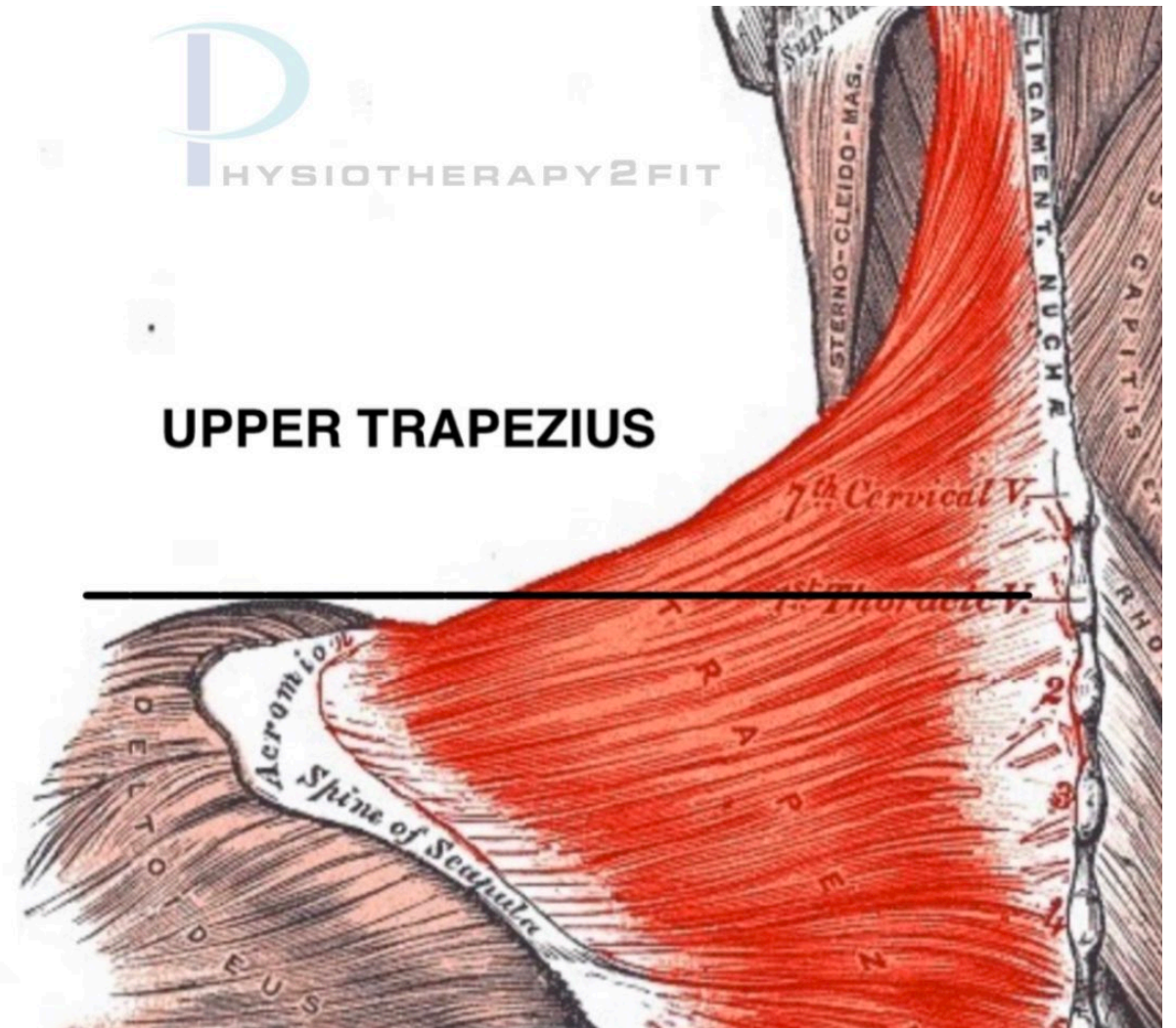
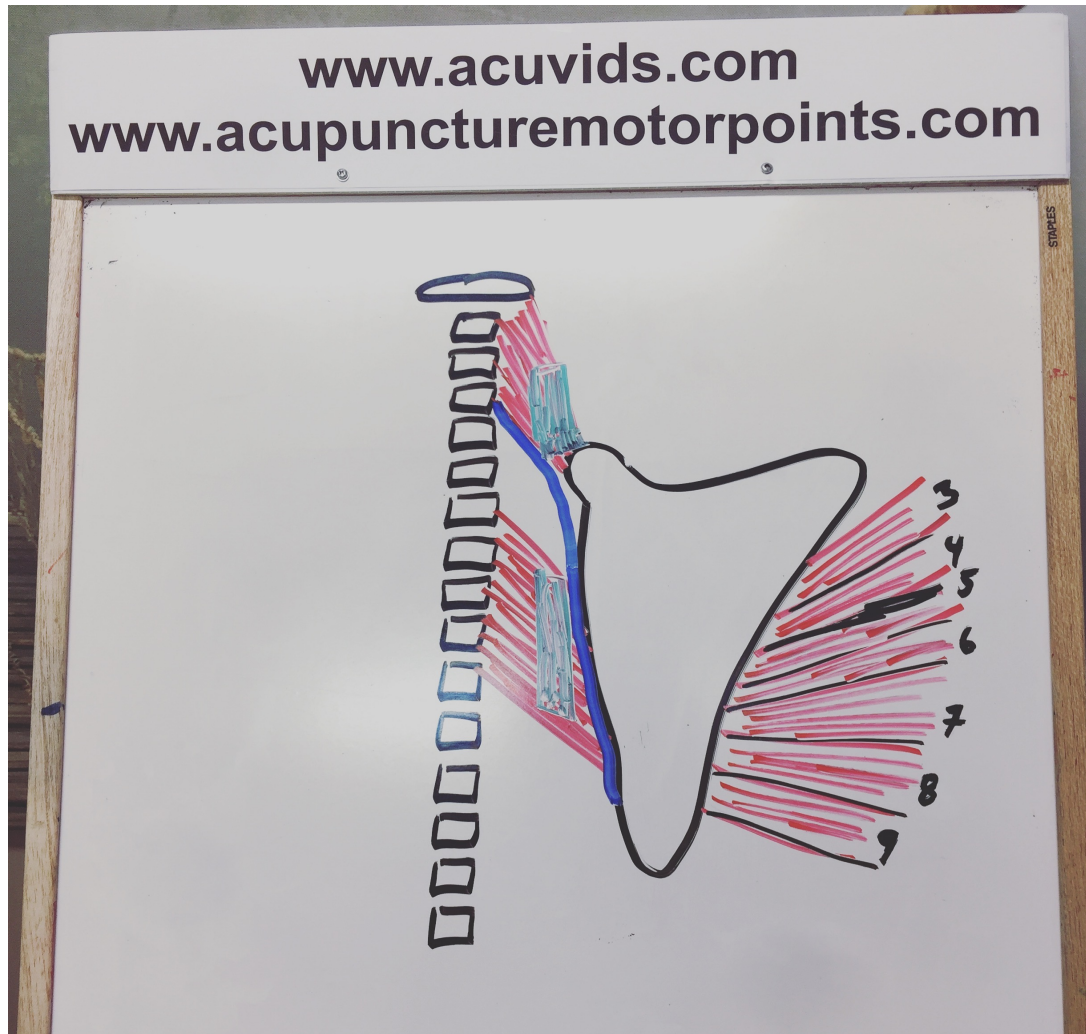
WHAT IS THE CERVICAL PLEXUS?

- SUPRACLAVICULAR NERVE
- TRANSVERSE CERVICAL NERVE
- LESSER OCCIPITAL NERVE

** ALL ARE CUTANEOUS NERVE THAT MODIFY THE MECHANICS OF THE CERVICAL SPINE INJURY.*

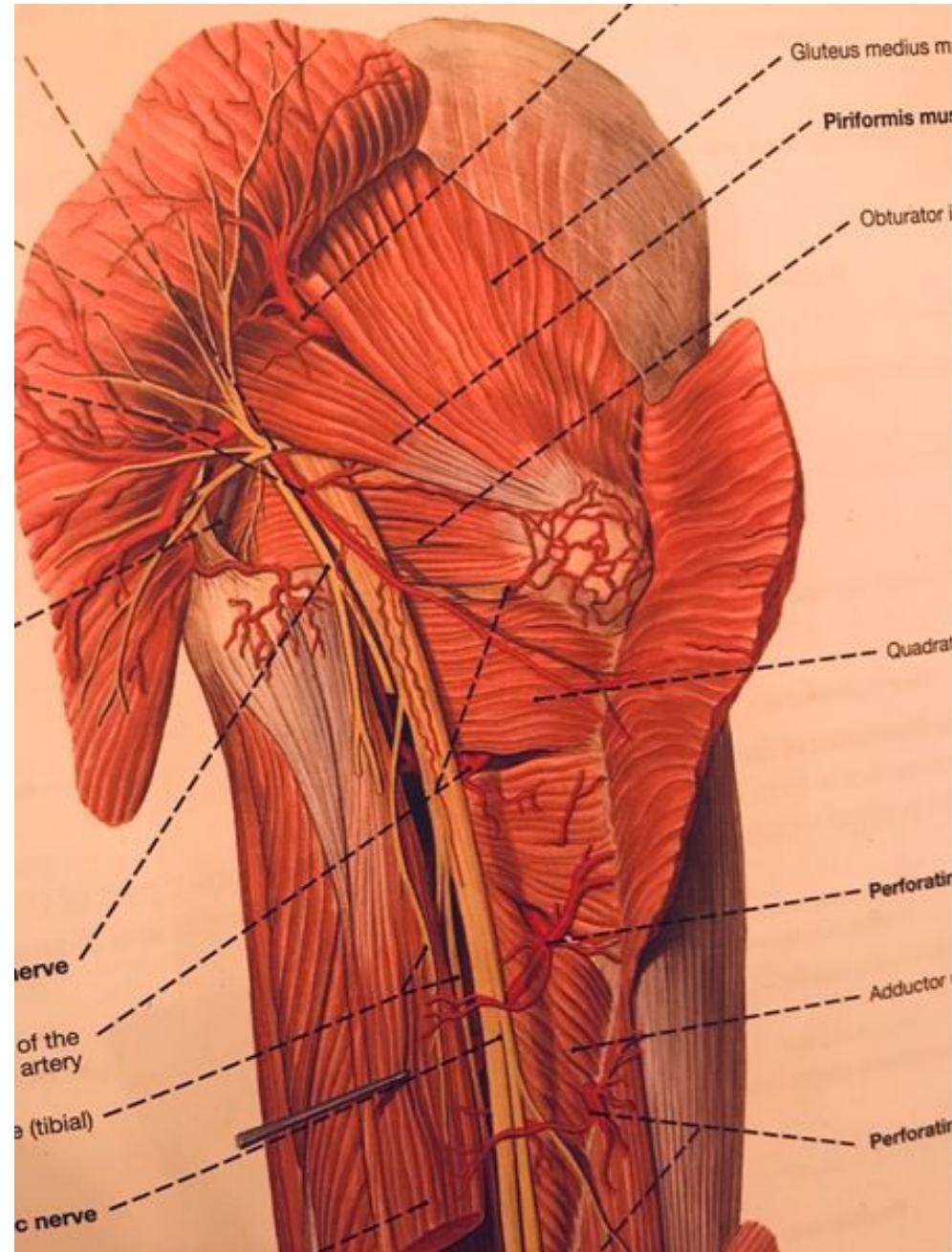


Serratus Anterior & Upper Trapezius



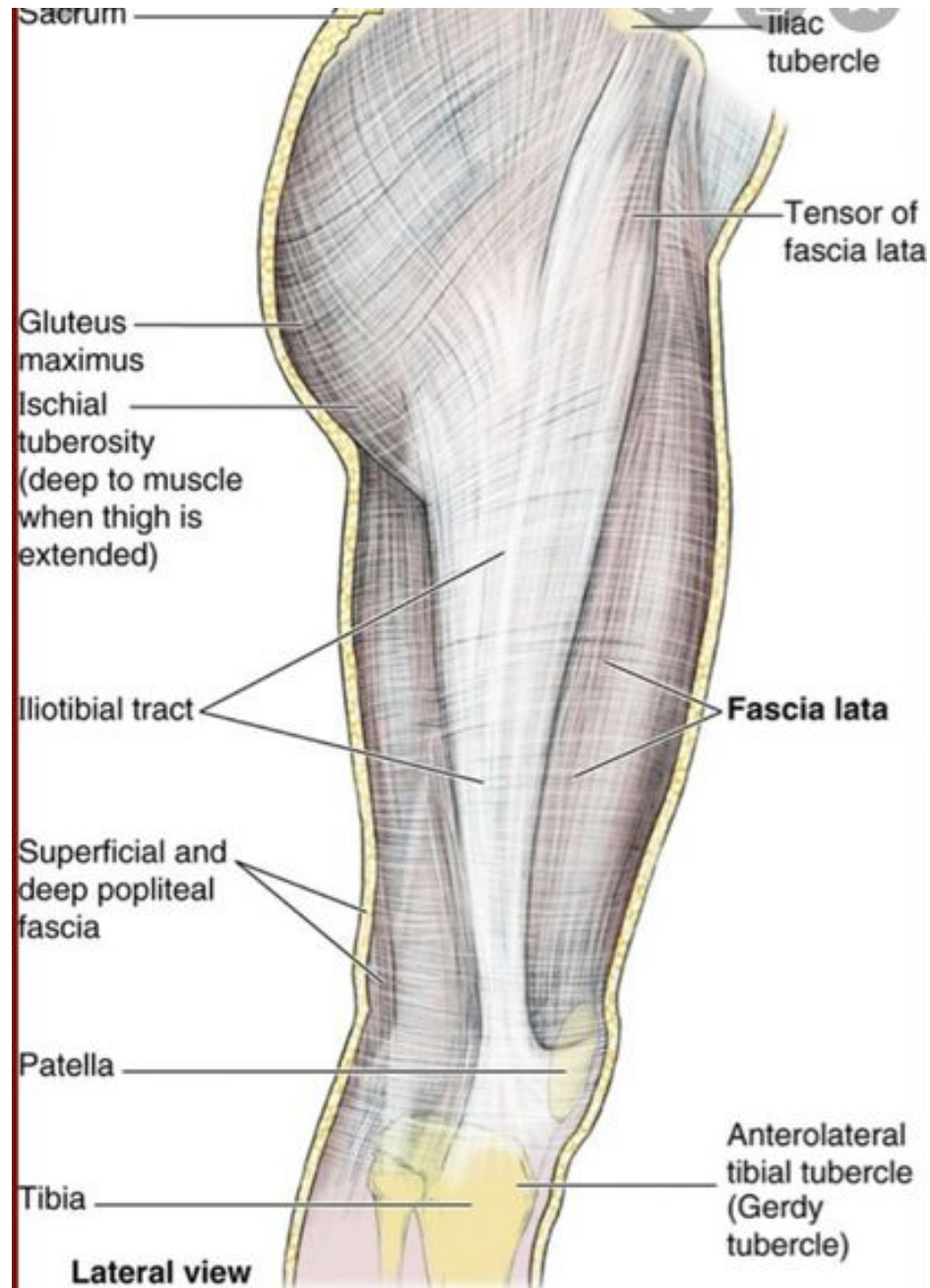
SIDE-LAYING LOW BACK RELEASE

- AFFECTED SIDE UP (LEFT SIDE UP = RIGHT CONTACT HAND)
- LEG EXTENDED AT KNEE
- POSITION YOURSELF BEHIND THE THIGH WITH YOUR LEFT HAND THE KNEE AND RIGHT HAND CONTACTING THE ISCHIAL TUBEROSITY.
- CREATE TENSION IN MULTIPLE DIRECTIONS AND PERFORM 30-35 TIMES.



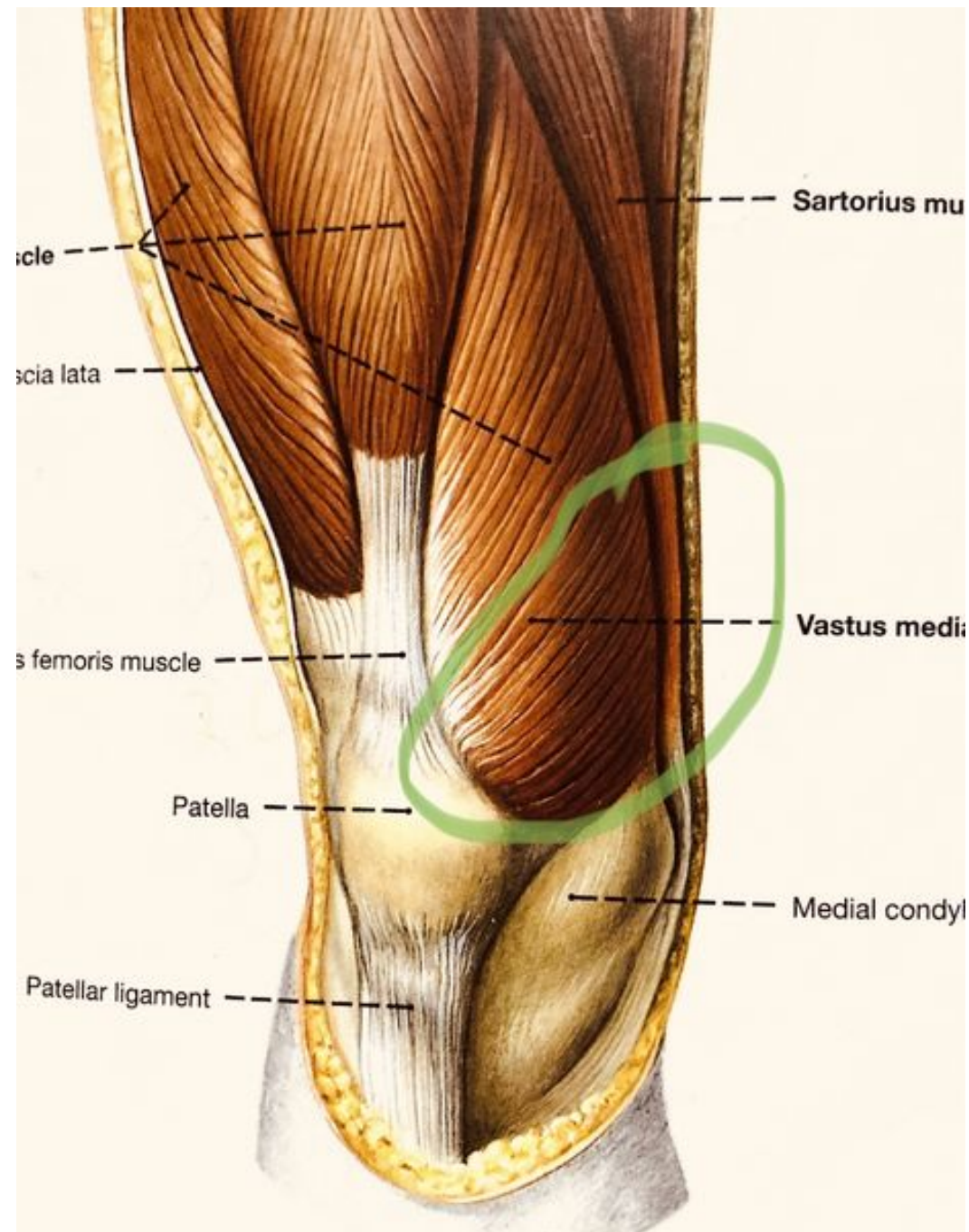
SUPINE ABDUCTOR RELEASE

- PATIENT SUPINE
- RIGHT CONTACT HAND ON LEFT HIP AND VICE-VERSA
- 30-35 PASSES
- WILL DRAMATICALLY INCREASE ROM OF HIP AND SLR.



VMO RELEASE

- A HOUSEHOLD TECHNIQUE FOR ANY OSTEOARTHRITIC PATIENT.
- TREATMENT SIDE DOWN
- CREATE CONTACT TENSION
- USE NON-CONTACT HAND TO ROTATE TIBIA AT HEEL TO MAXIMIZE IMPROVEMENT.



GUIDELINES OF SOFT TISSUE DELIVERY

Body Position

1. Stance

- relaxed, wide stance, bend knees

2. Hand location

- contact vs. non-contact
- gentle, holding a sparrow

3. Digital Tension

- #1 rule: create tension in ALL DIRECTIONS
- NO COMPRESSION

4. Number of passes

- minimum 30
- aim for 50-60 passes/minute

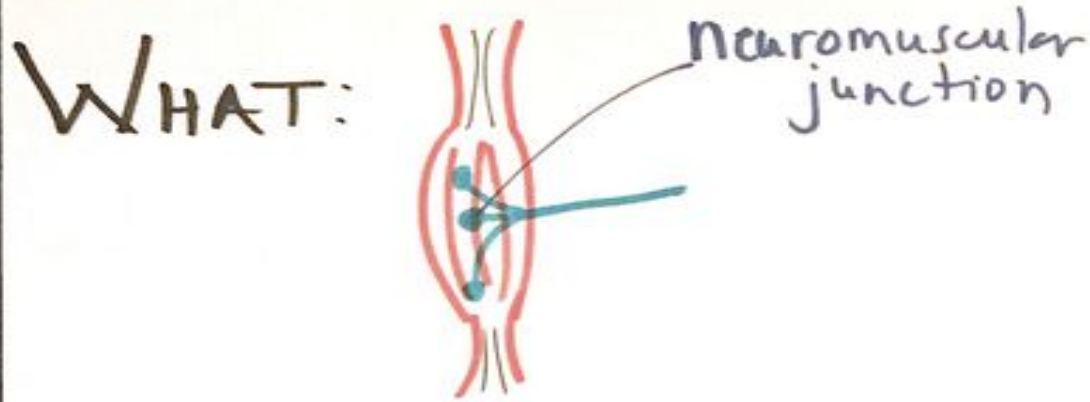
5. Fluidity

- your ENTIRE body does soft tissue
- it's a bodily movement → Dance

MOTOR POINT NEUROMODULATION

INTRODUCTION TO MOTOR POINTS

Intro to Motor Points



Pointer Plus: 10Hz, hold 8-10sec,
4-5x

Needle Depth: deep to fascia

Non-Dominant Hand: depress tissue,
direct electron
flow

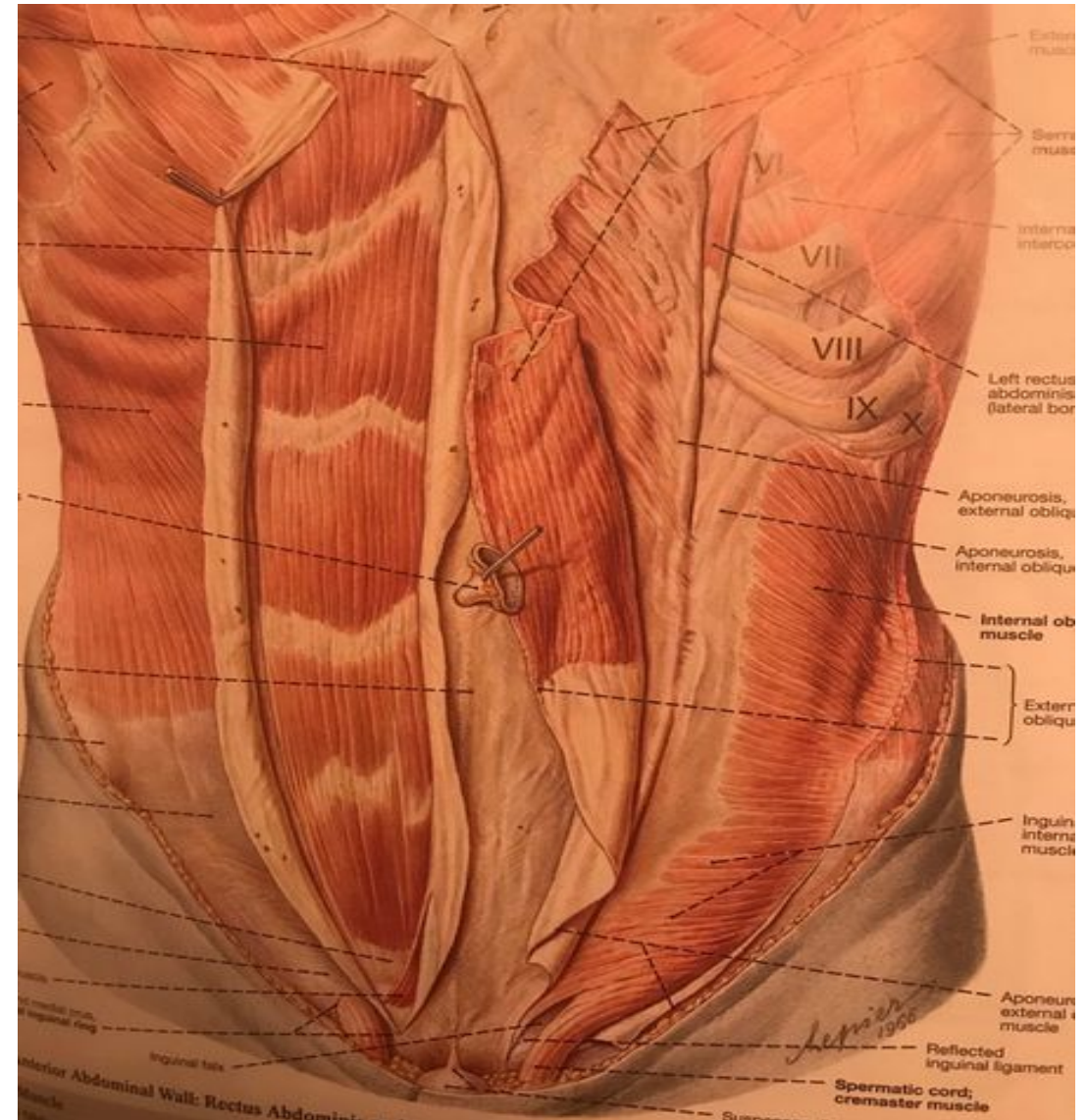
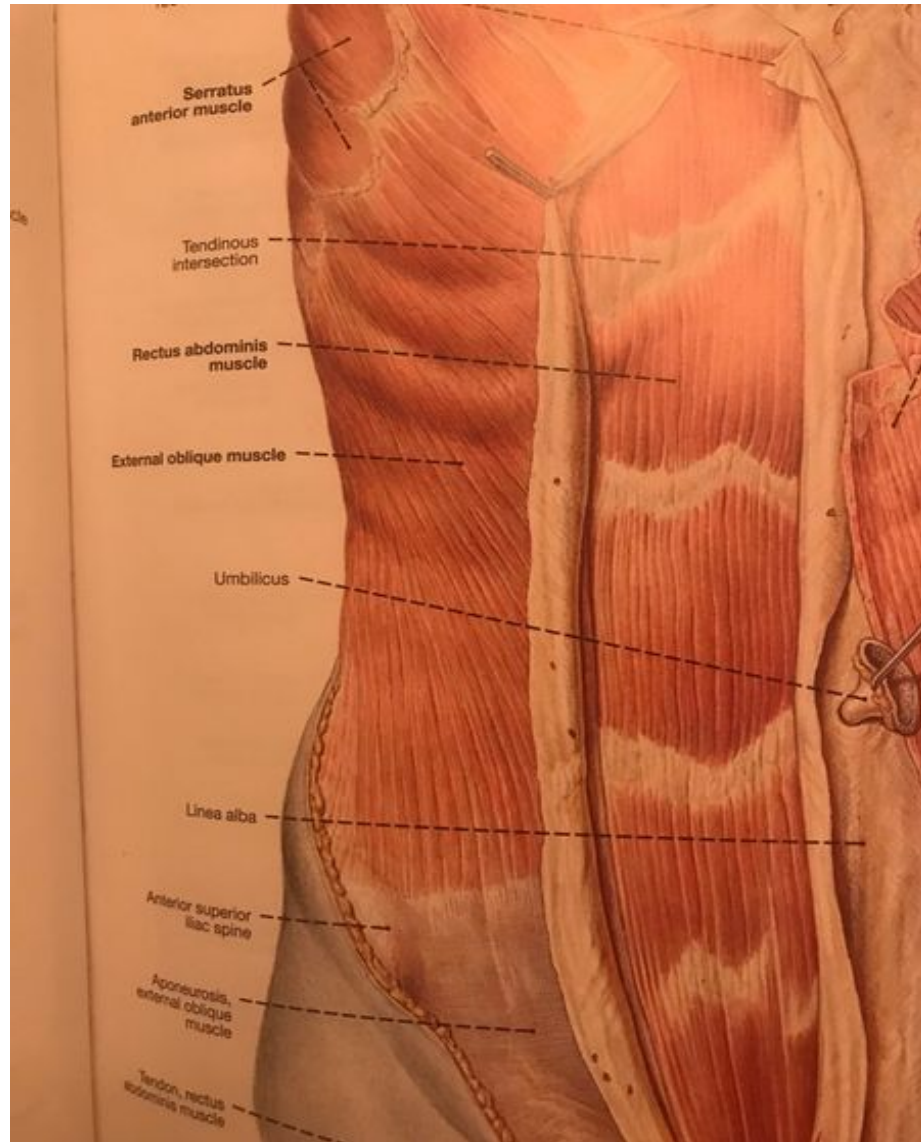
WHEN ARE MOTOR
POINTS USED?

MOTOR Points

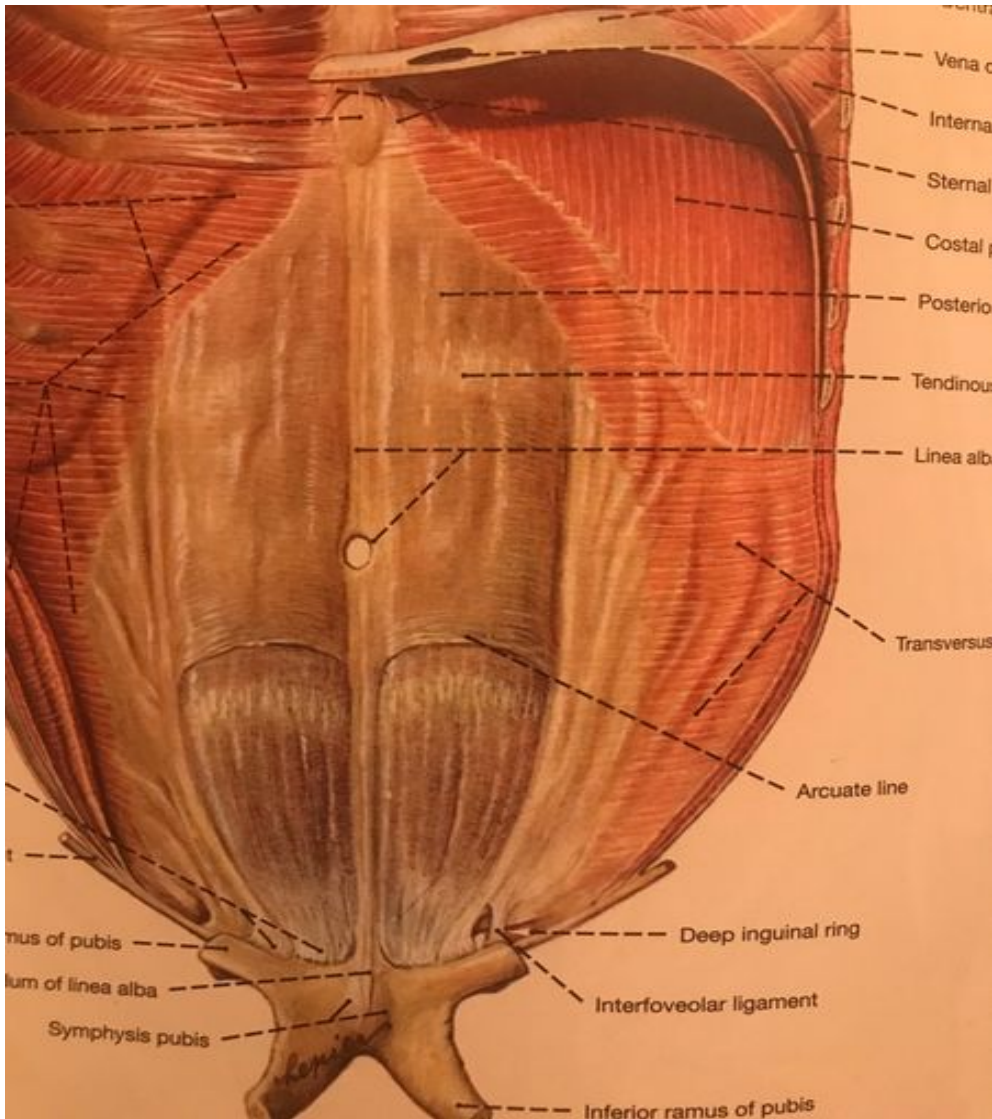
WHEN:

- to restore motor muscle activation (inhibition)
- for mechanical conditions ONLY
- to ↑ movement + stability in joints
- NOT For Chronic Pain
Systemic

EXTERNAL (2) & INTERNAL OBLIQUE (exstore)



TRANSVERSE ABDOMINUS



BEFORE & AFTER: Acute Low Back Protocol



SATURDAY – MOTOR POINTS

A

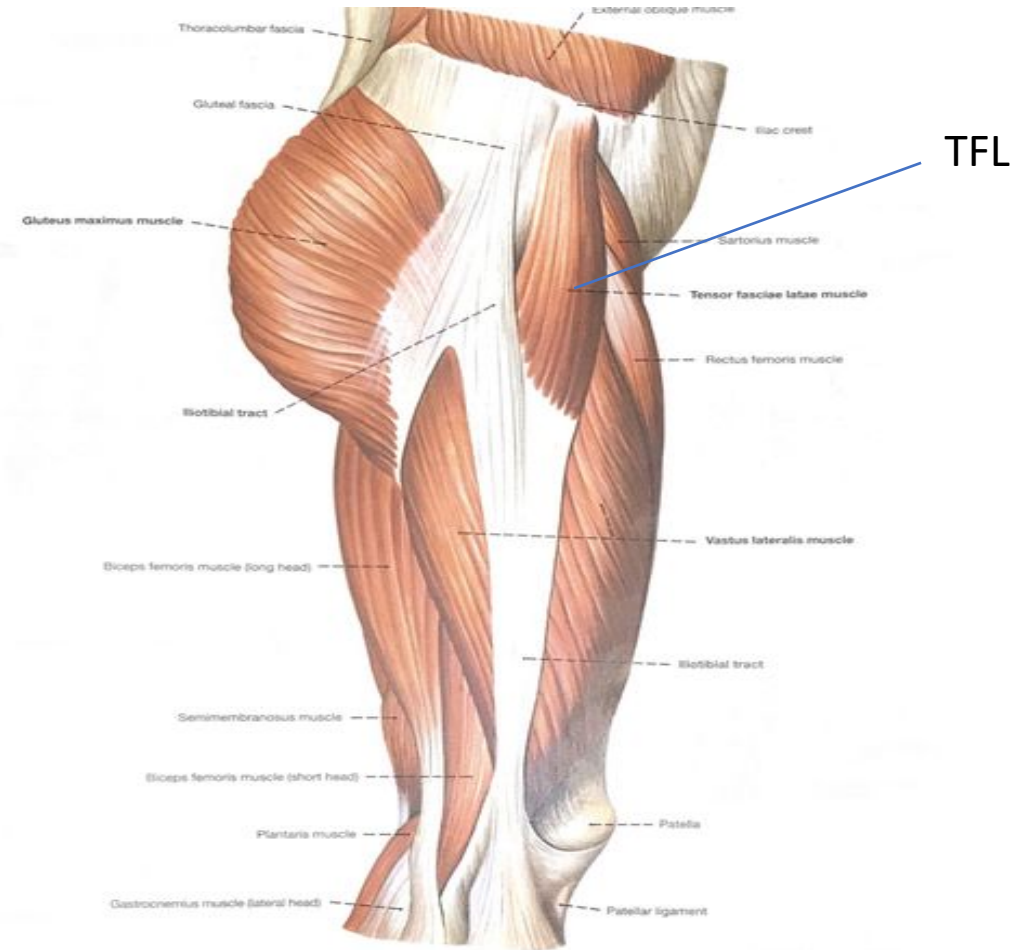
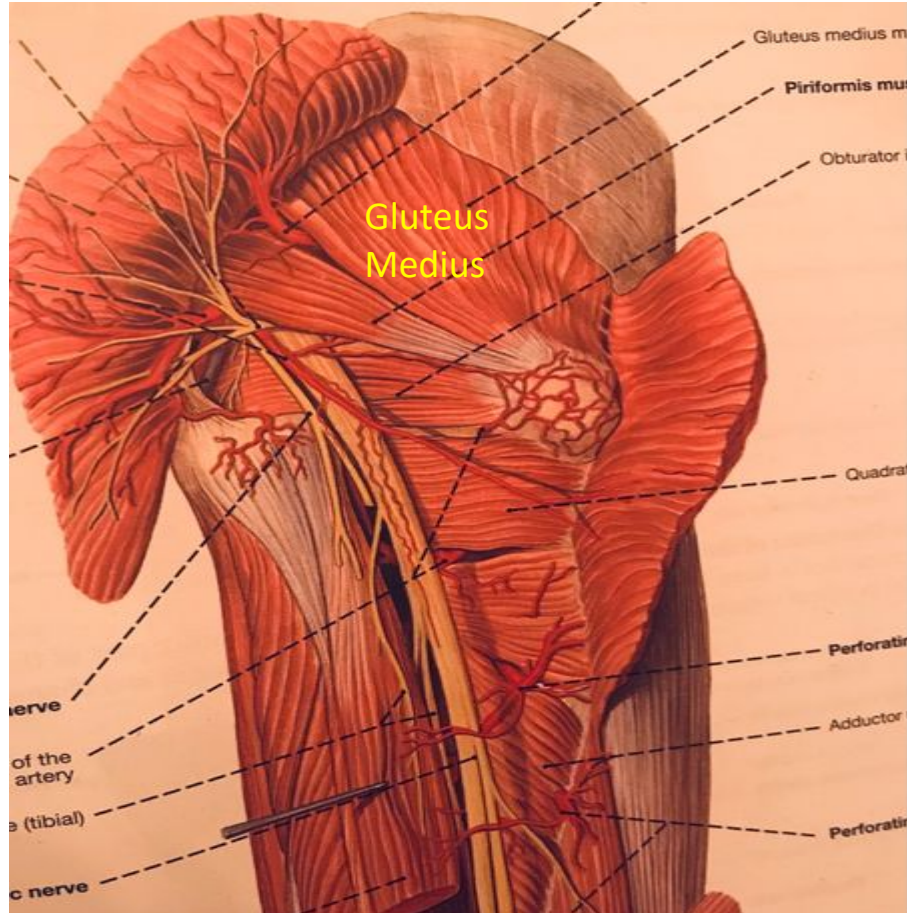
QL and Gluteus Medius

QUADRATUS LUMBORUM

- LOCATE L4/L5 TRANSVERSE PRO
- INSERT PERPENDICULAR
- DEPTH 2-3 CM



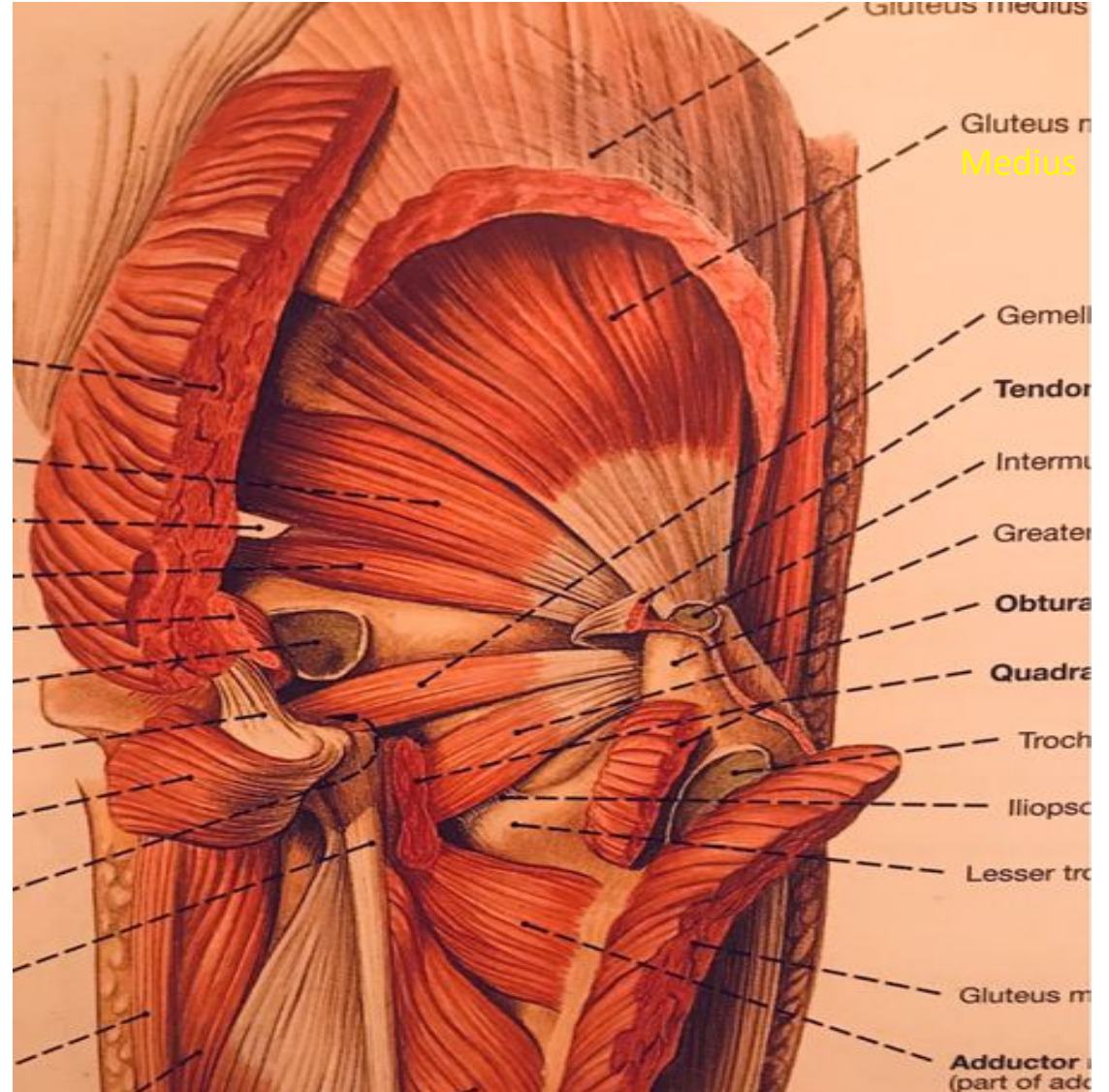
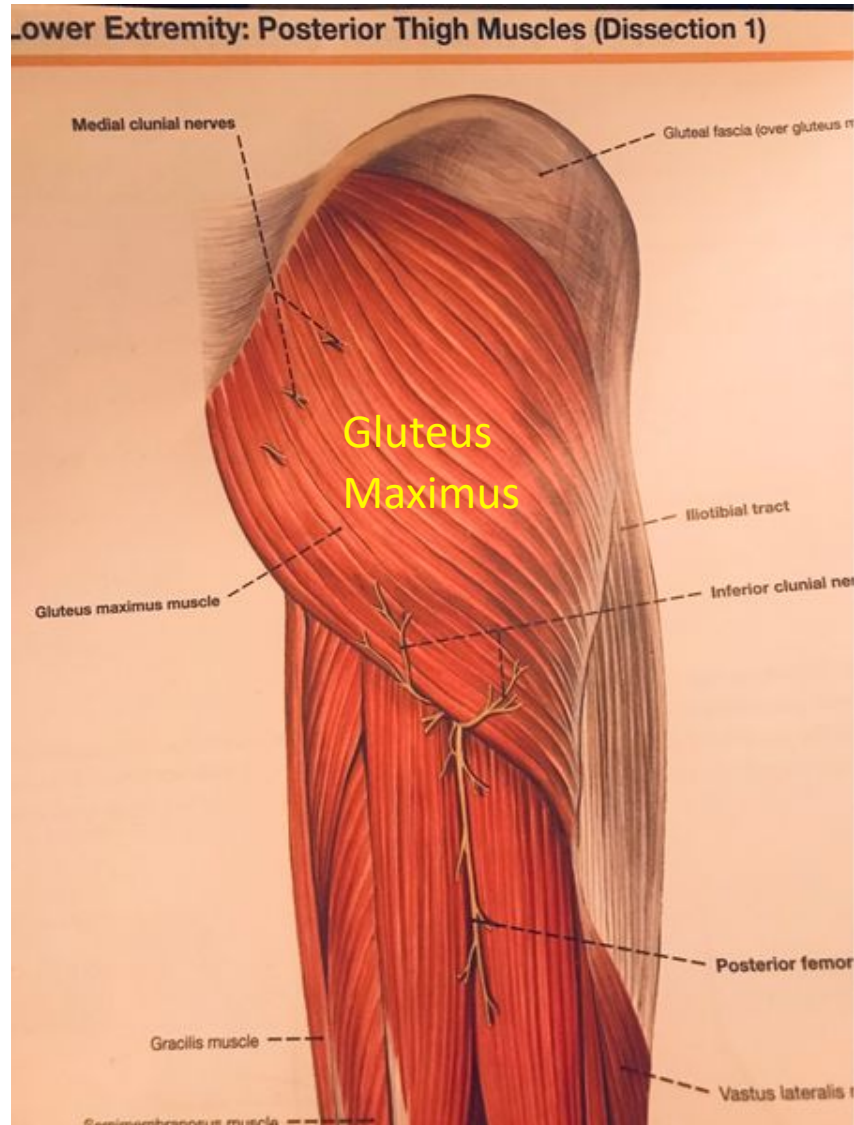
GLUTEUS MEDIUS (2), TFL



B

Gluteus Maximus (3)

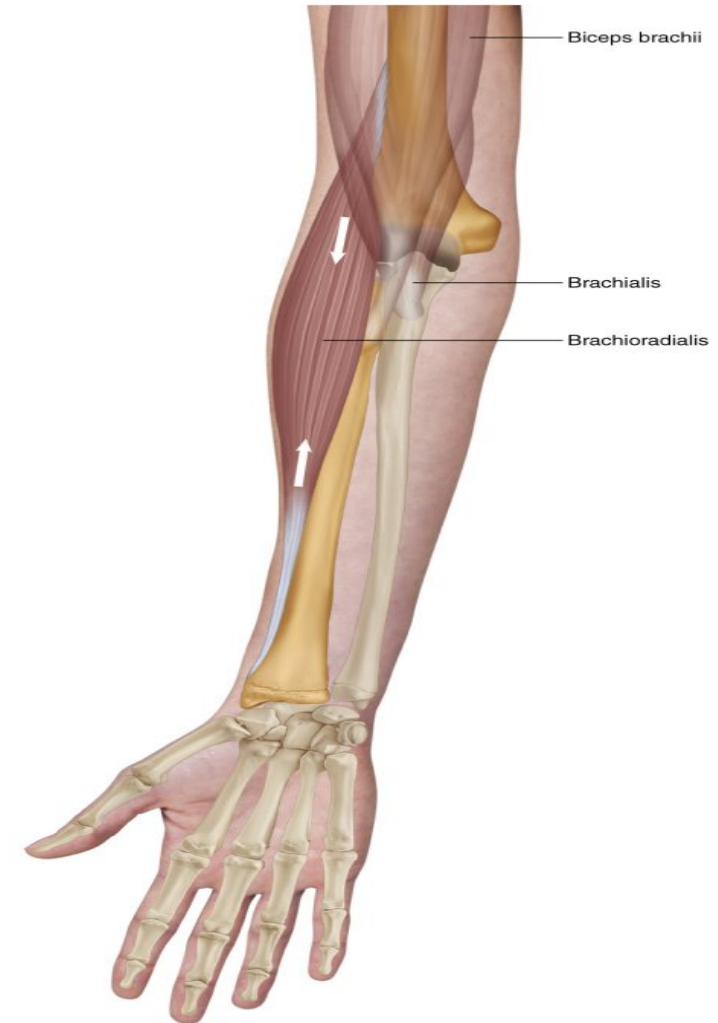
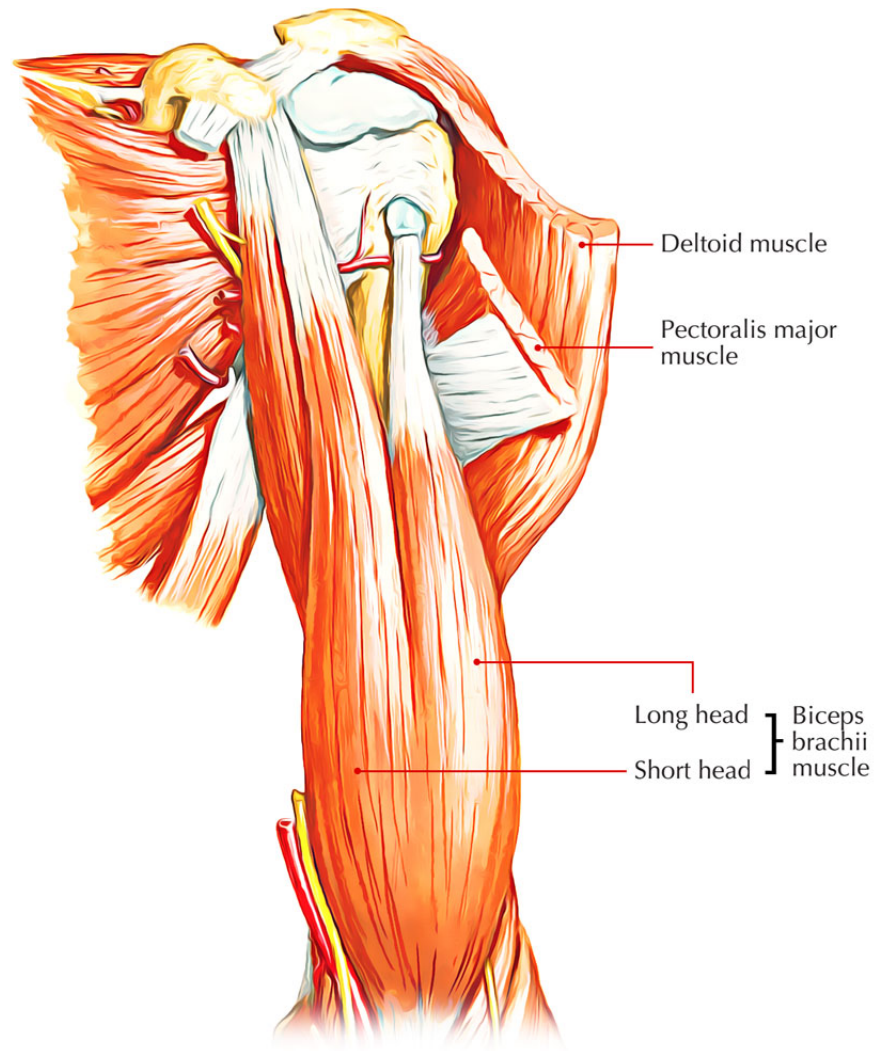
GLUTEUS MINIMUS, GLUTEUS MAXIMUS (3) (ex)

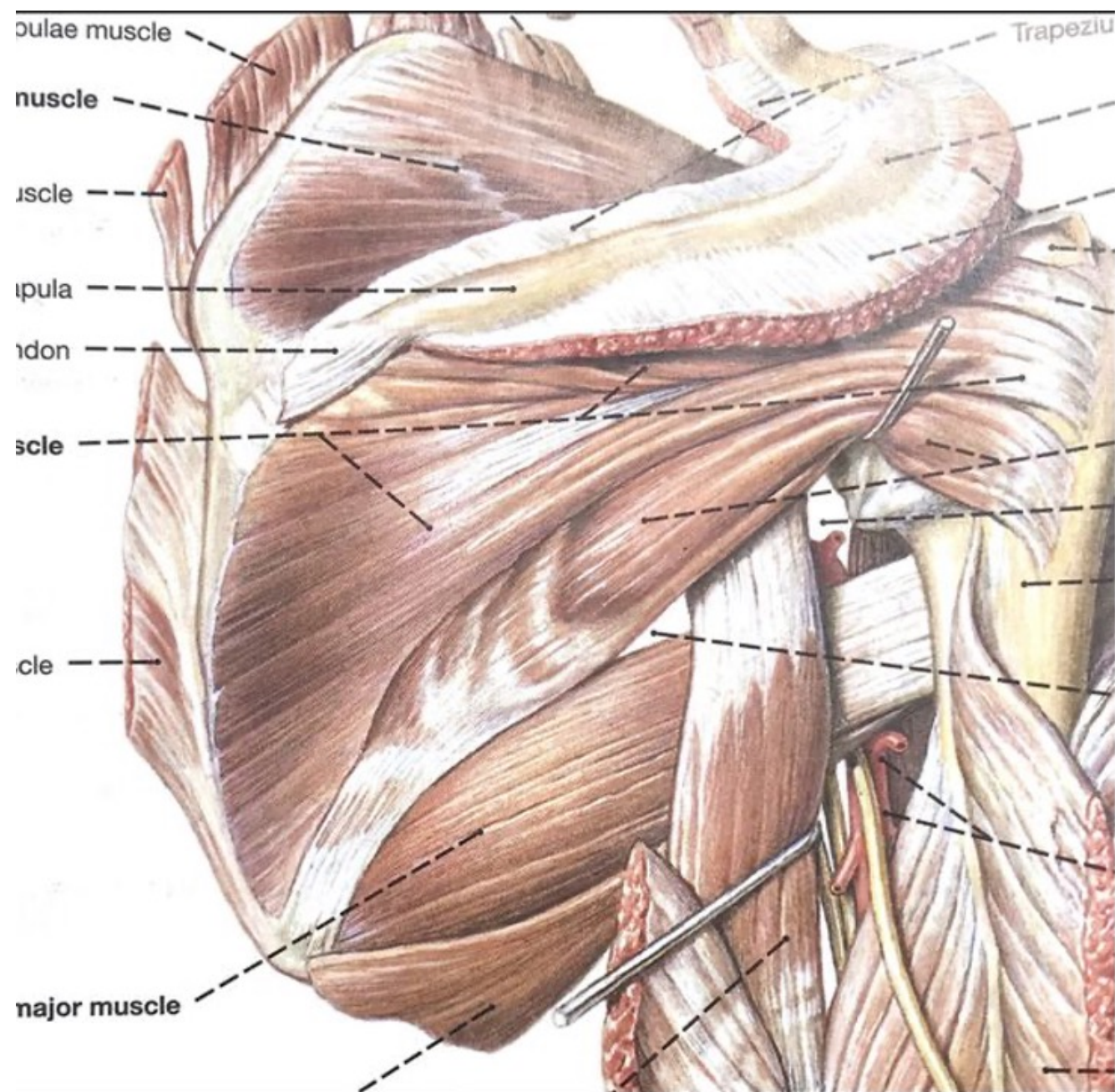


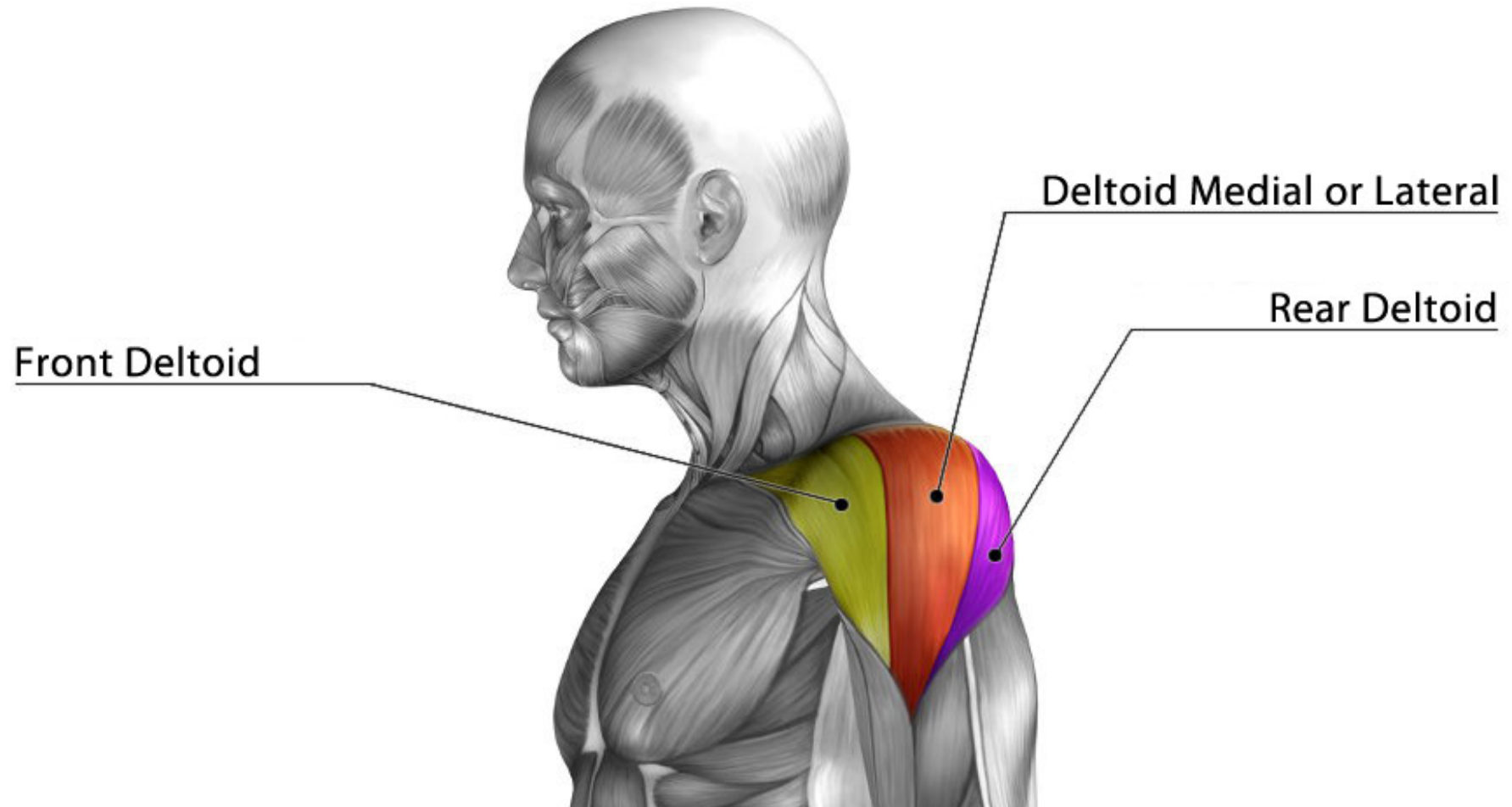
C

Biceps brachii, deltoid, upper trapezius

BICEPS BRACHII (2), DELTOID (3) UPPER TRAPEZIUS



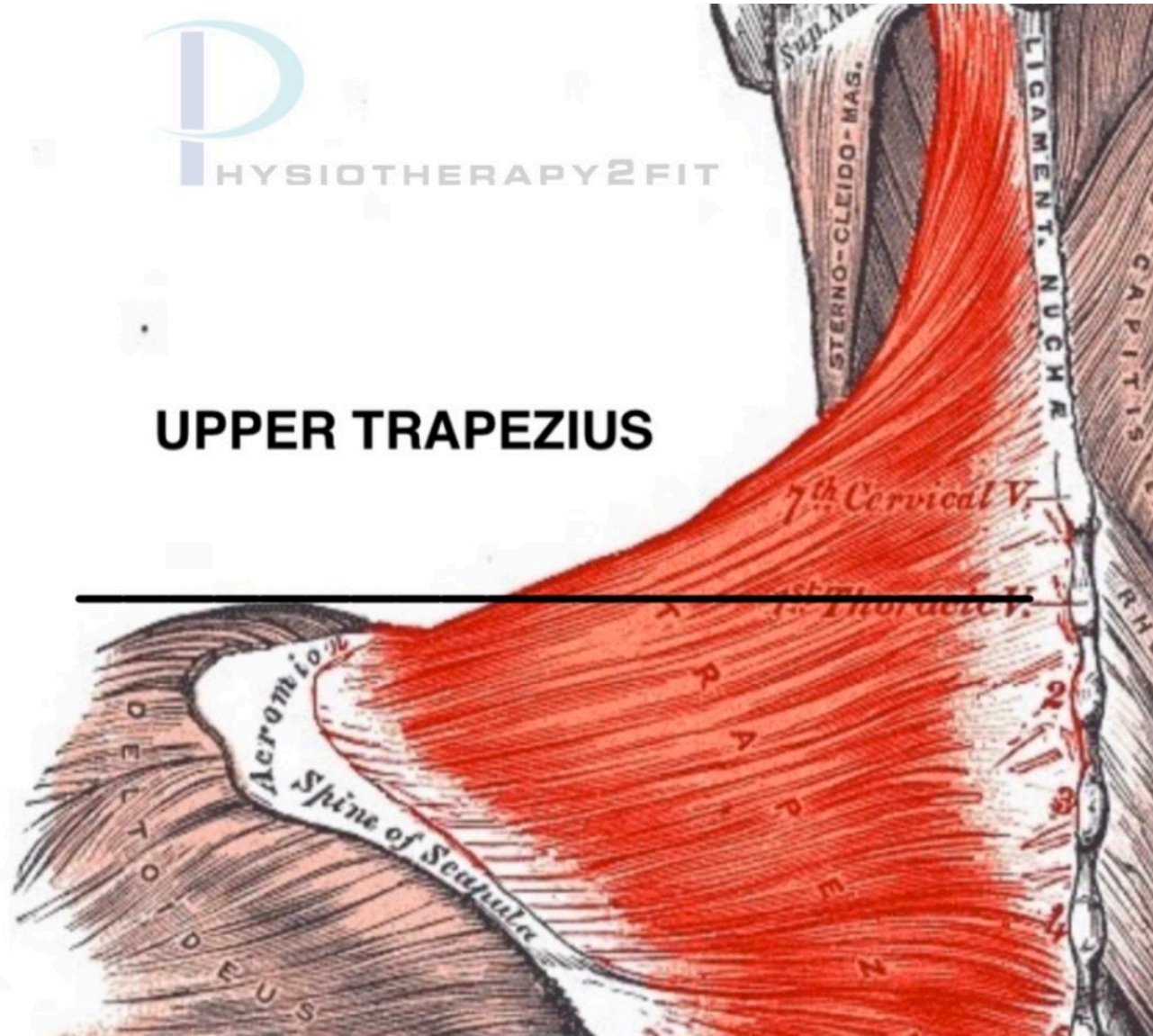




UPPER TRAPEZIUS



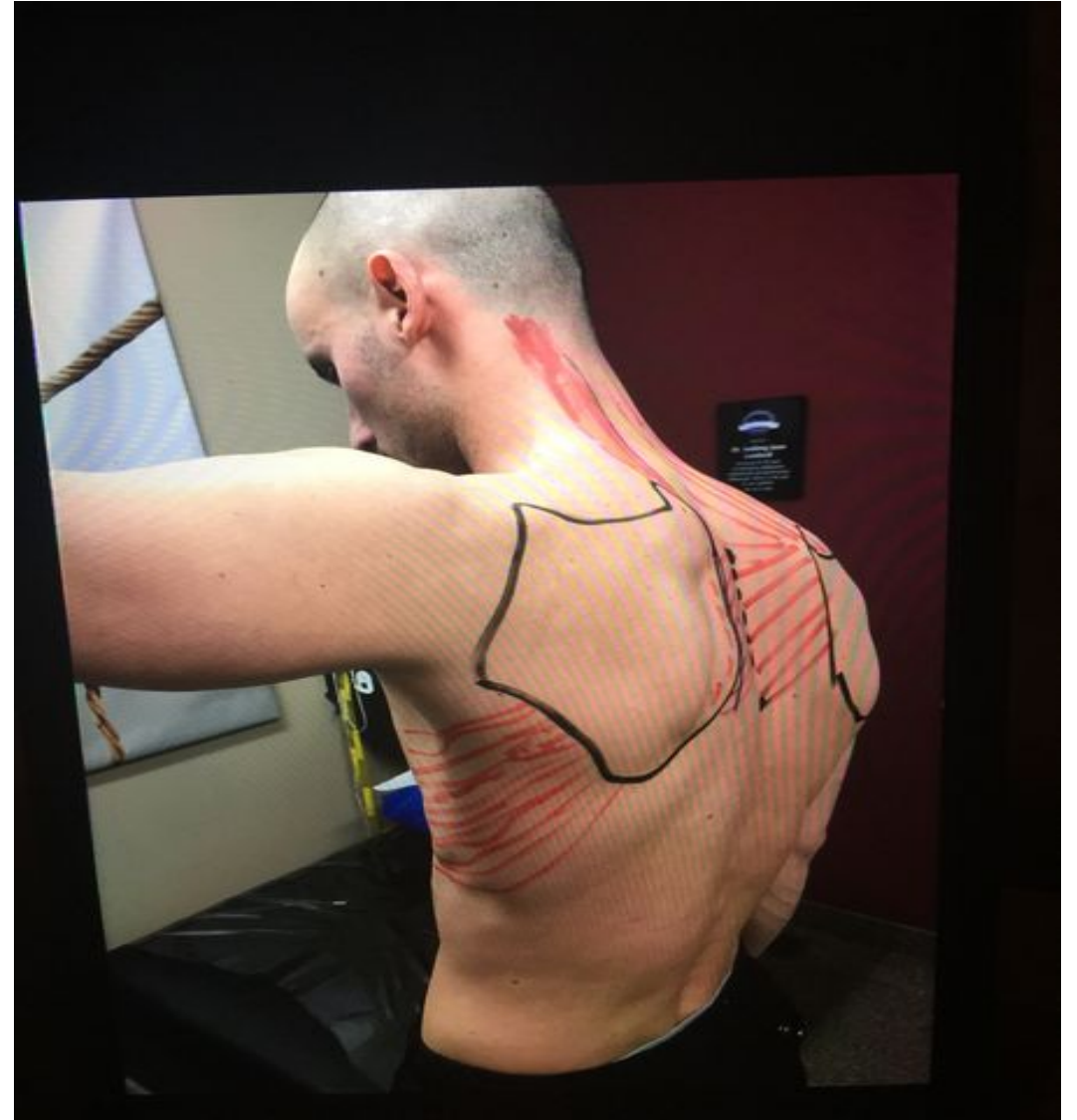
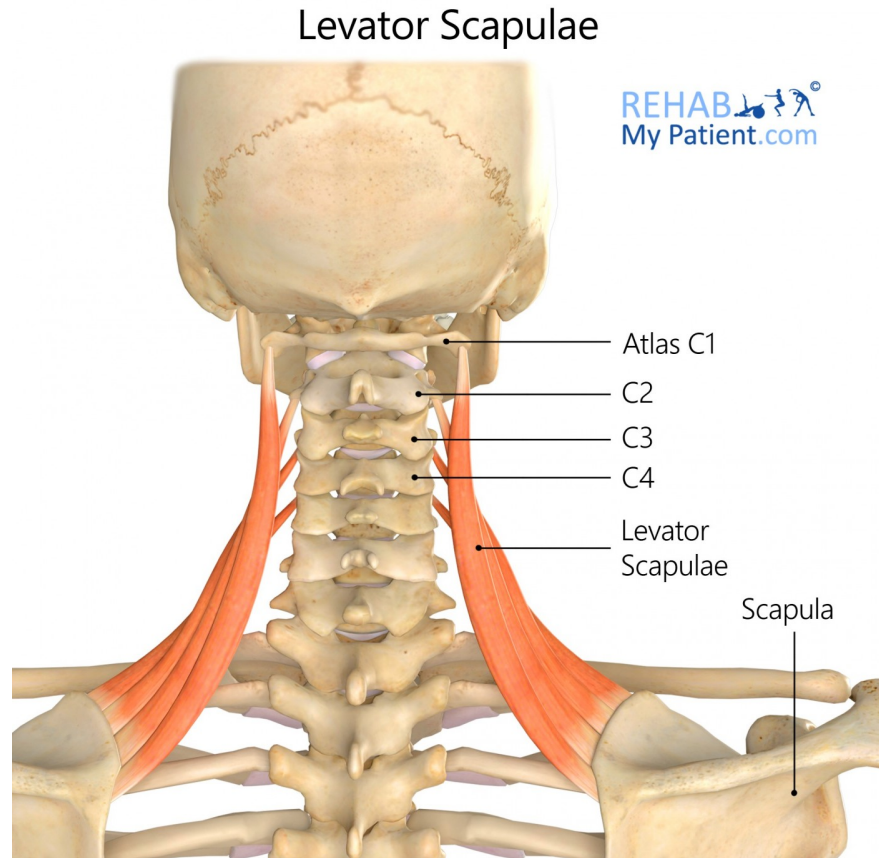
UPPER TRAPEZIUS



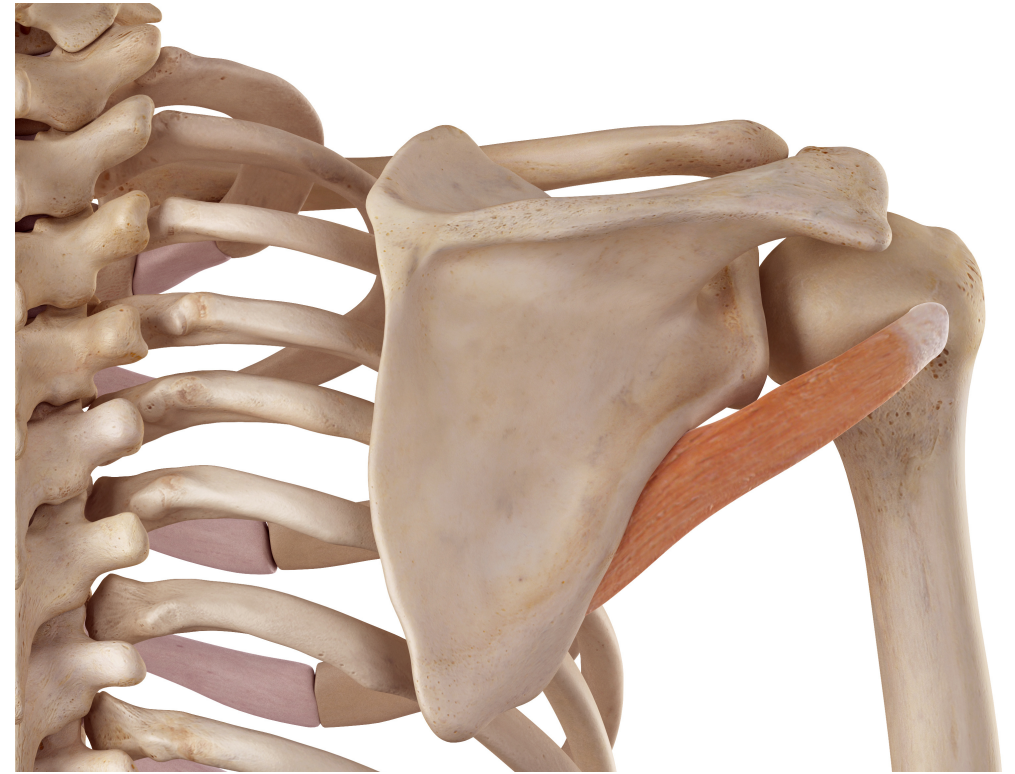
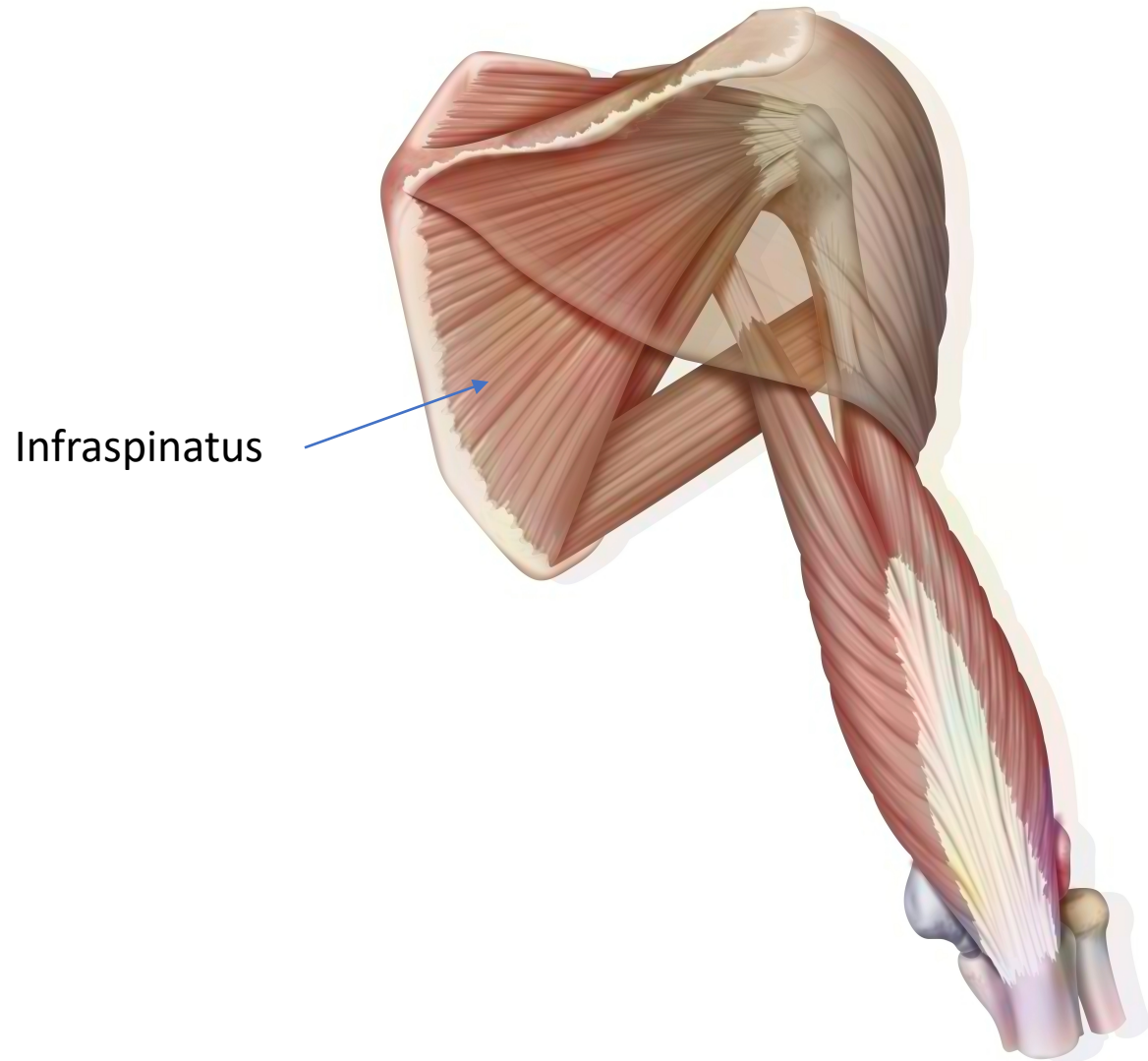
D

Levator scap, serratus anterior, infraspinatus, teres minor

LEVATOR SCAPULA, SERRATUS ANT (exstore)



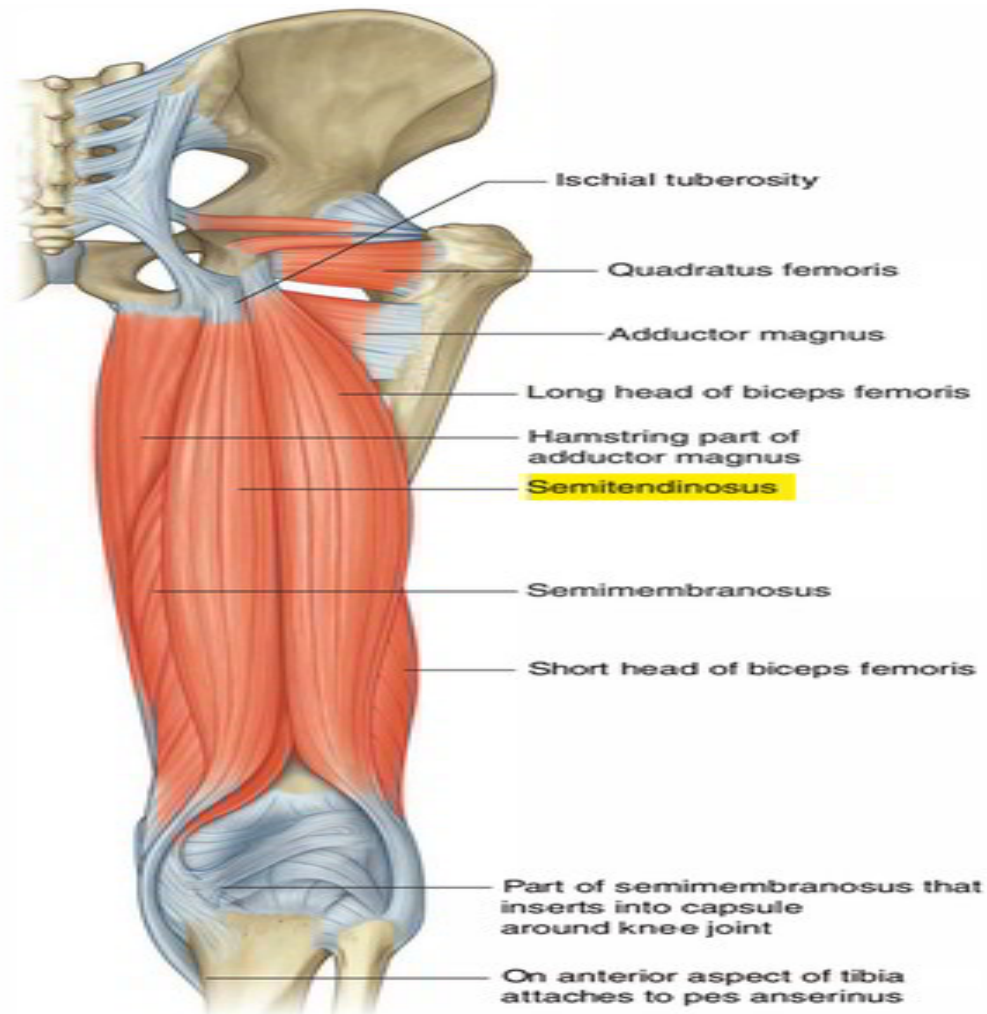
INFRASPINATUS, TERES MINOR (EX)



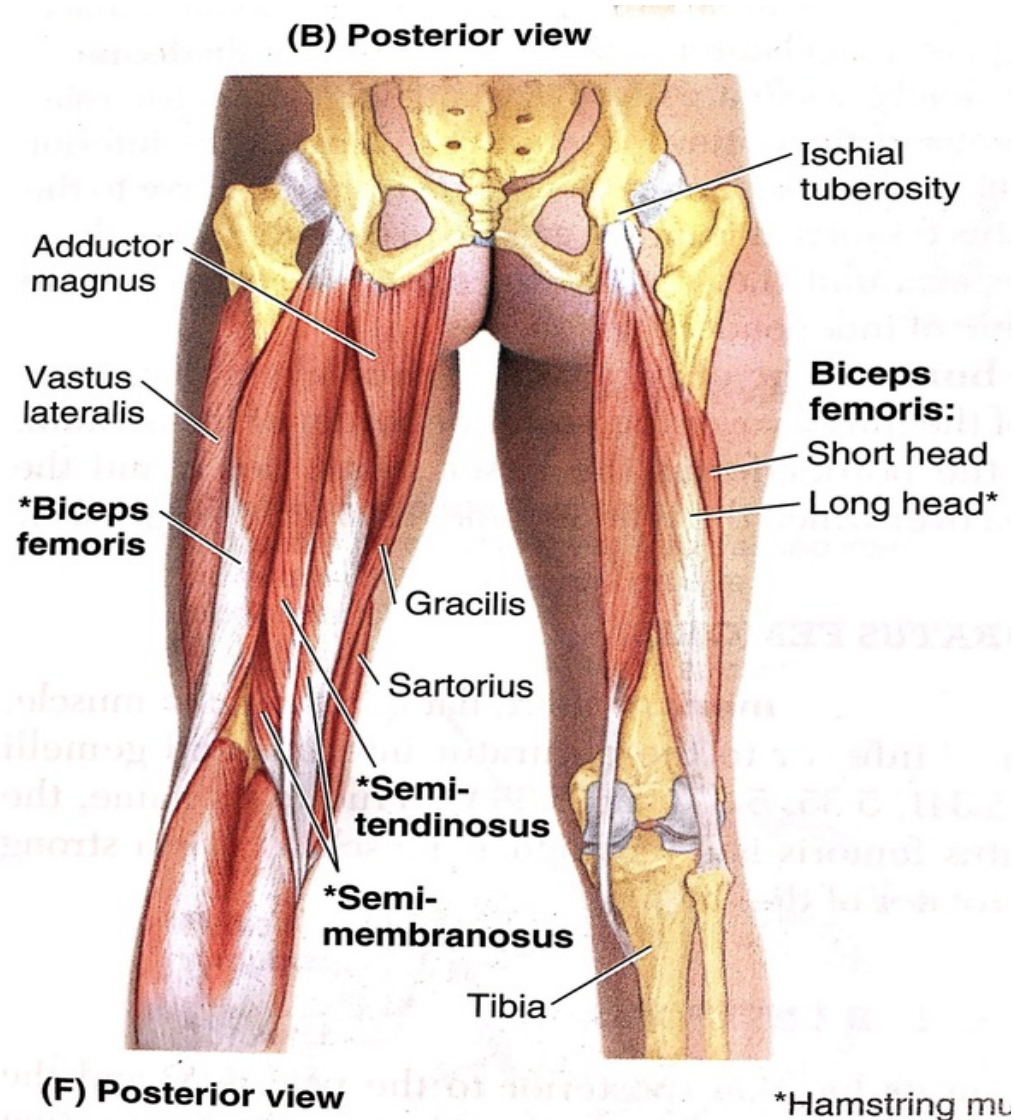
E

Semintendinosus, semimembranosus; short and long head of biceps femoris

SEMITENDINOSUS (3), SEMIMEMBRANOSUS



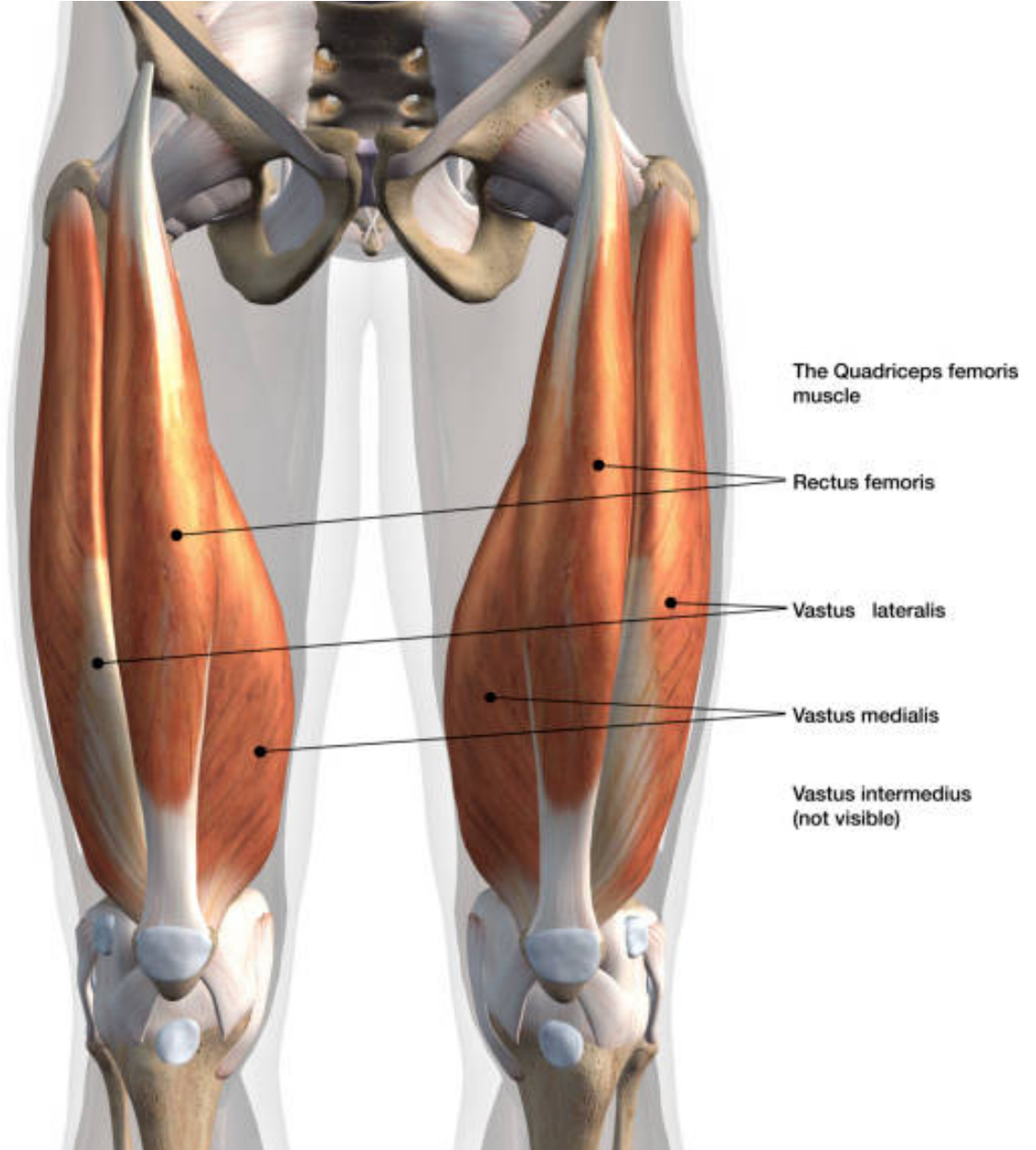
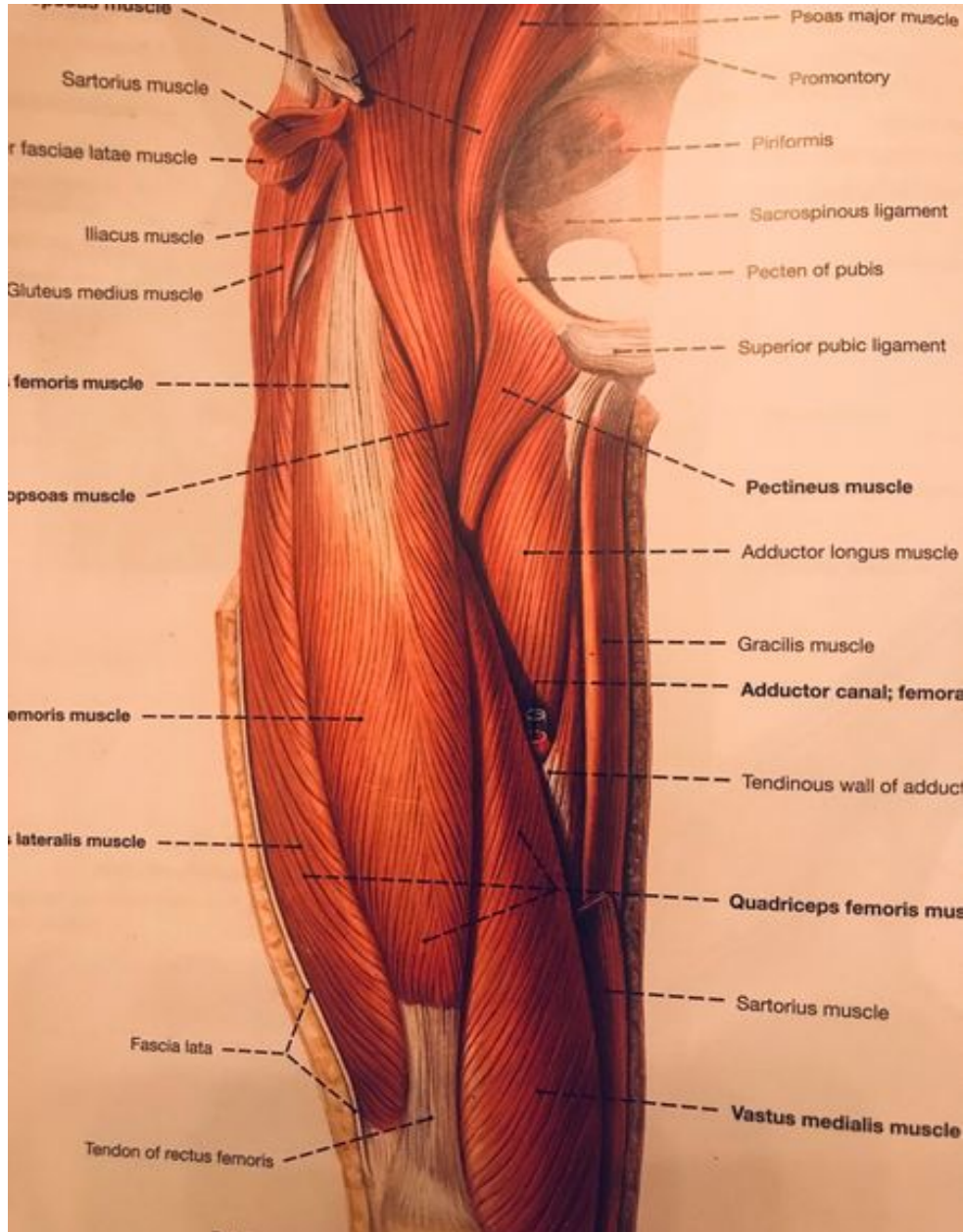
SHORT & LONG HEAD (2) OF BICEPS FEMORIS



F

Rectus femoris, vastus lateralis and medialis

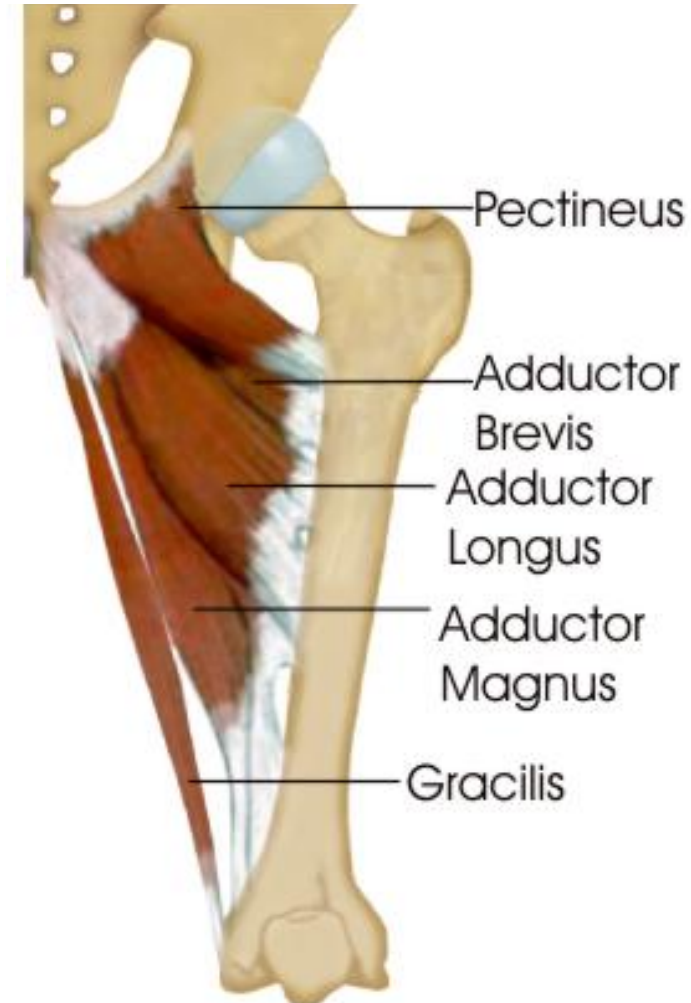
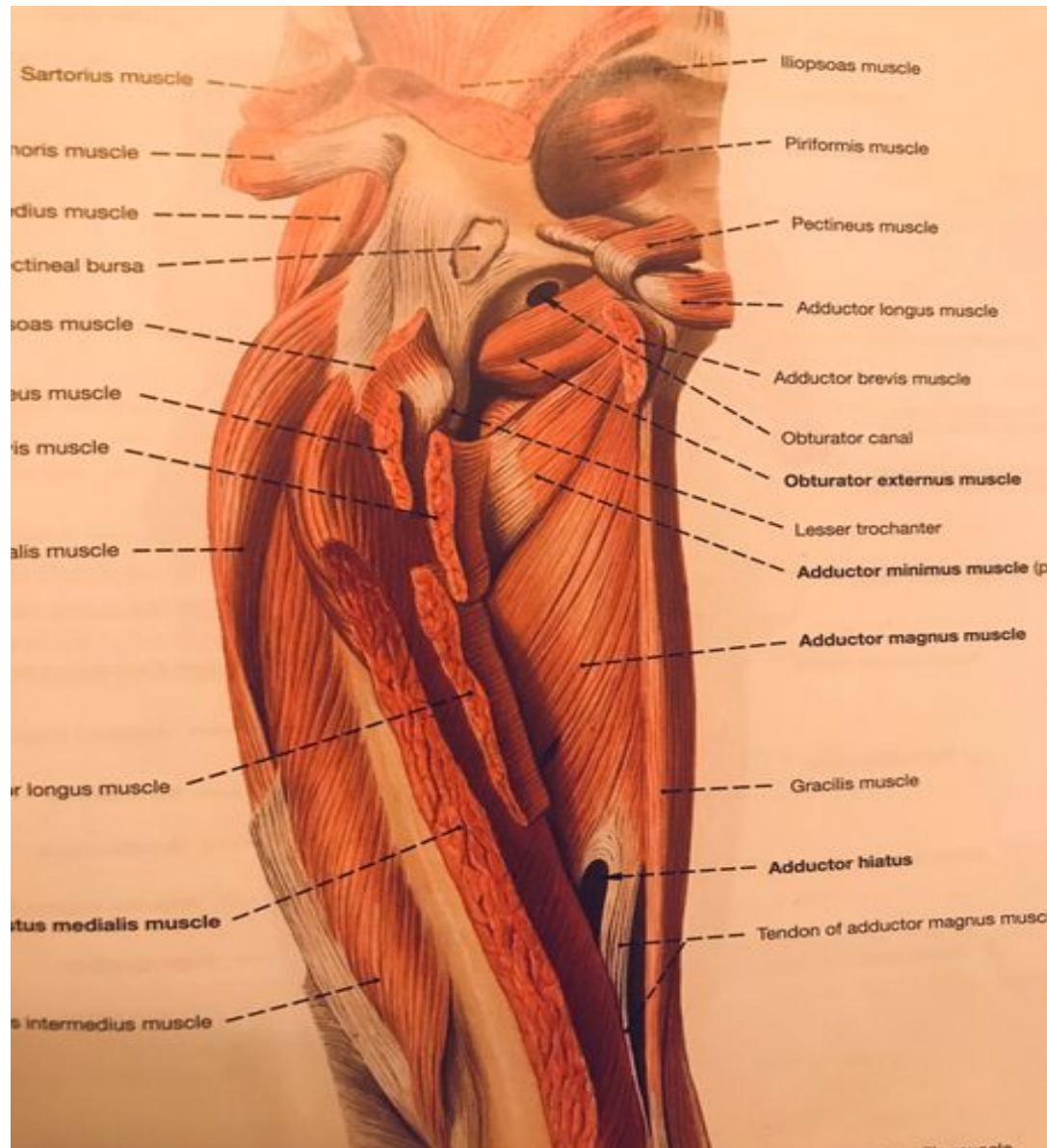
QUAD: RECTUS FEMORIS (2), VASTUS LAT (2)/MED



G


Adductors

ADDUCTORS (ex)



LOCALS: MENTORSHIP COMMUNITY

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SUNDAY

RE-VISITING TREATMENT PLAN

VISIT 1

- FOCUSED HISTORY
- ASSESSMENT:
 - EXSTORE IF MECHANICAL
 - PALPATION IF CHRONIC SYSTEMIC
- CORRECT INHIBITIONS/BEGIN SYSTEMIC TREATMENT
- MANUAL THERAPY MAY BE LOCALLY APPLIED TO IMPROVE SOFT TISSUE HEALTH AND IMPROVE ROM.

VISIT 2

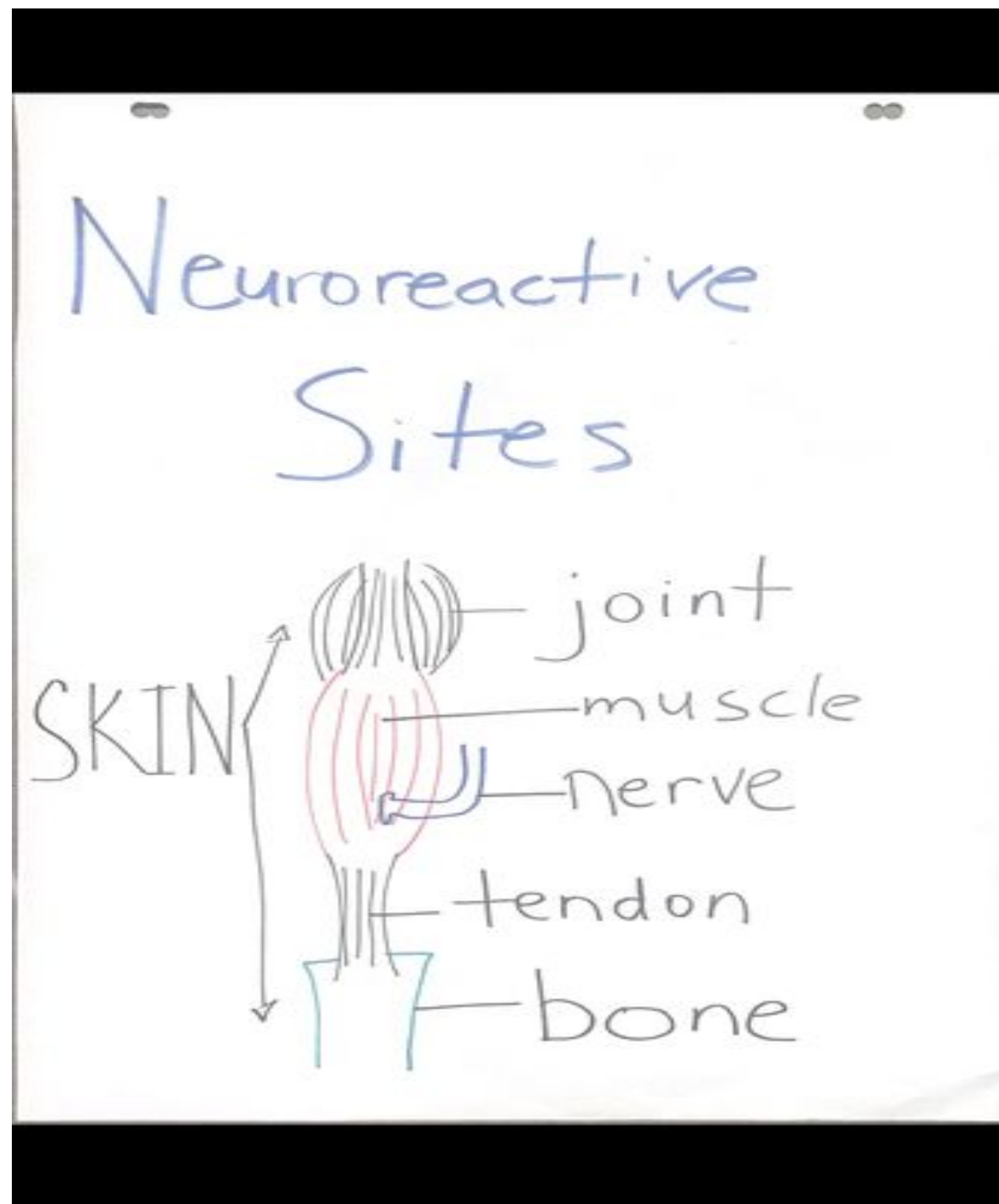
- RE-ASSESS EXSTORE, ROM ETC
- CORRECT INHIBITIONS IF A MECHANICAL PRESENTATION
- TREAT LOCAL AREA OF TIGHT BANDS/ADHESIONS WITH *RENOVATION TECHNIQUES*
- IF CHRONIC SYSTEMIC CONTINUE THAT TREATMENT (PERFUSION, AURICULAR, DISTAL)
- BEGIN MANUAL THERAPY LOCALLY TO IMPROVE SOFT TISSUE HEALTH AND IMPROVE ROM.

VISIT 3 AND BEYOND

- GO THROUGH VISIT 2 STEPS
- CONTINUE IMPROVING SOFT TISSUE USING *RENOVATION, PERFUSION, AND MANUAL TECHNIQUES*
- MECHANICAL TREATMENT LASTS 2X PER WEEK FOR 3 WEEKS
- CHRONIC SYSTEMIC TREATMENT LAST 2X PER WEEK FOR 4 WEEKS

NEUROMODULATION PRINCIPLES

NEUROREACTIVE SITES



MUSCLE SPINDLES

Muscle Spindle

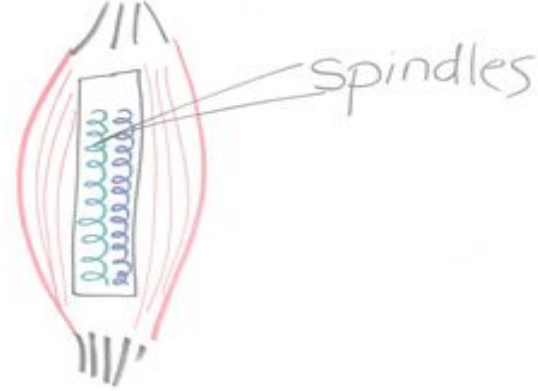
- Sympathetic fibers

Chronic dz = \uparrow Symp tone

°° explains global inhibition

* Cutaneous Needling
2-3mm

Muscle Spindle



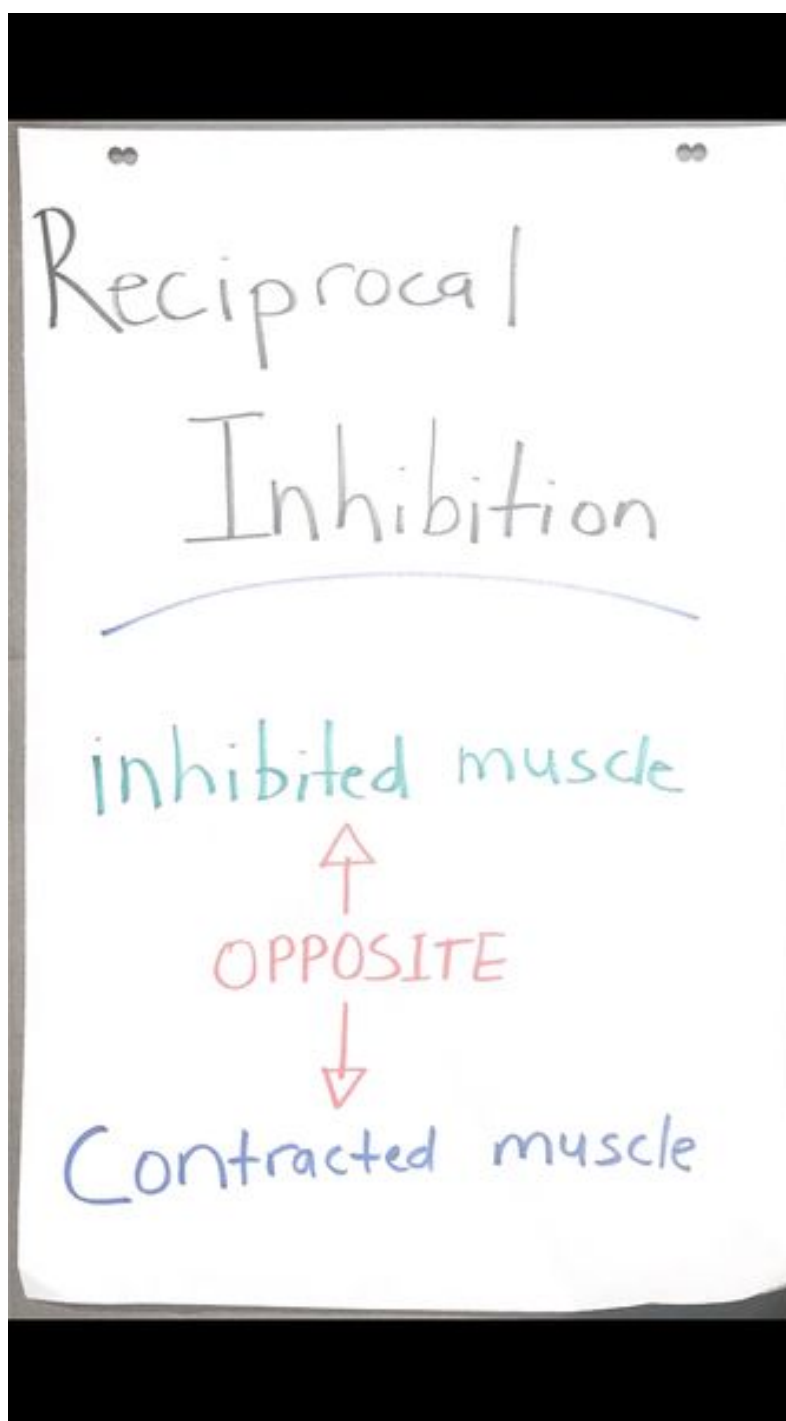
Sensory feedback
↓
motor function

ROLE OF MOIST HEAT ON MUSCLE SPINDLES

- TYPE II MUSCLE SPINDLES TRANSMIT NOCICEPTIVE INFORMATION AND TACTILE TOUCH (MEISSNER'S, PACINIAN CORPUSCLES AND RUFFINI ENDINGS)
- DURING INJURY THESE TYPE II SPINDLES WILL ELICIT PAIN DURING TACTILE TOUCH.
- RESEARCH TELLS US THAT APPLYING MOIST HEAT TO THE INJURED AREA DEPRESSES TYPE II MUSCLE SPINDLES WHICH DESENSITIZES THE AREA – REDUCING PAIN.

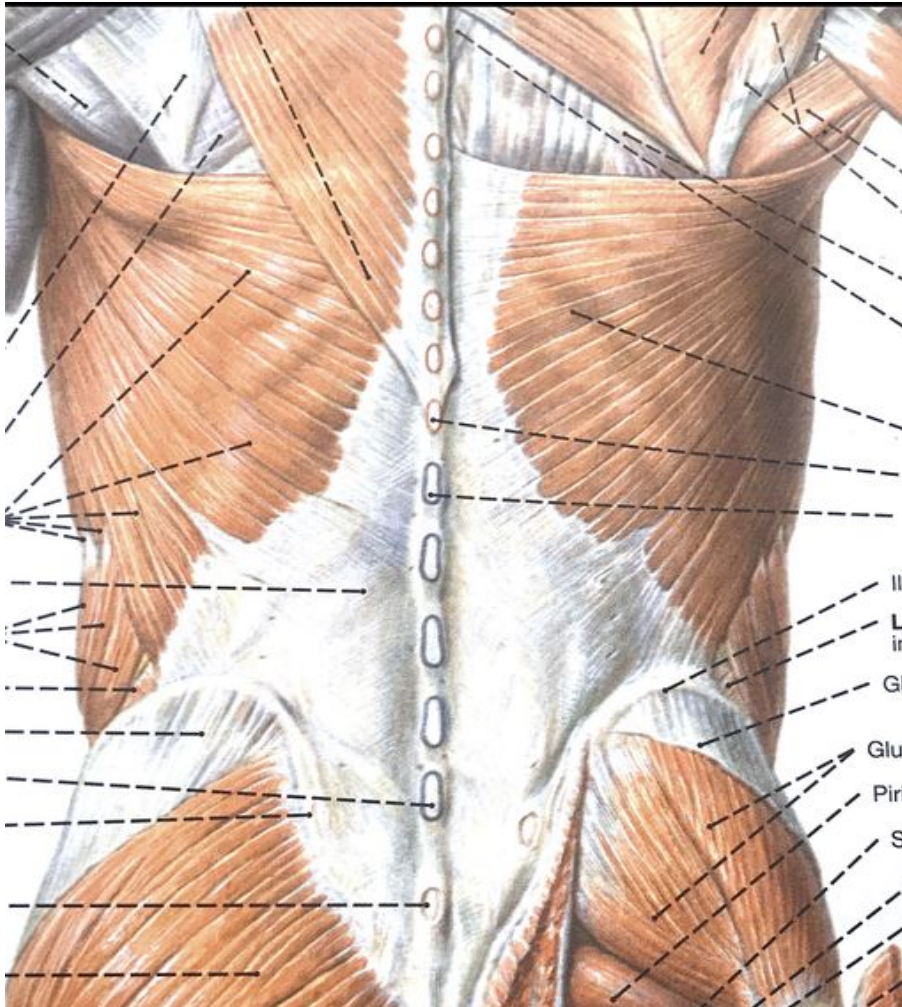
RECIPROCAL INHIBITION

- Pairs of muscles that move in instant opposite directions
- agonist moves muscles and antagonists does not oppose movement
- ie. Biceps brachii/triceps
- **MOTOR INHIBITION DISRUPTS RECIPROCAL INHIBITION FROM WORKING CORRECTLY.**

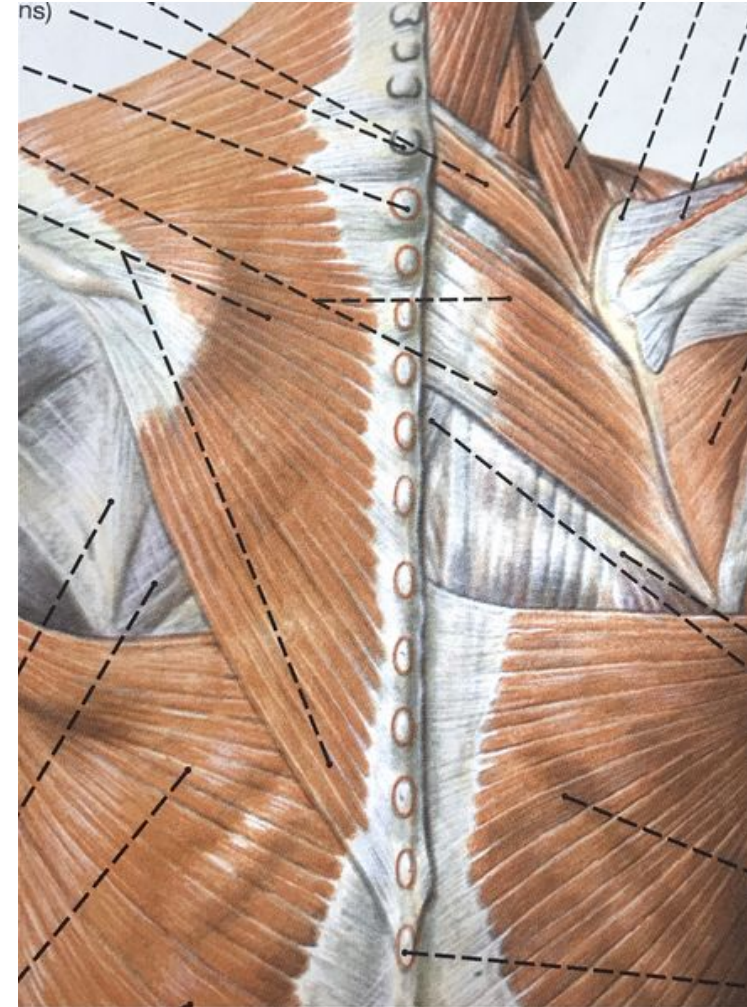


ONE WAY ANTAGONISTIC PAIRS

AGONIST- LATISSIMUS DORSI



ANTAGONIST – MIDDLE TRAPEZIUS

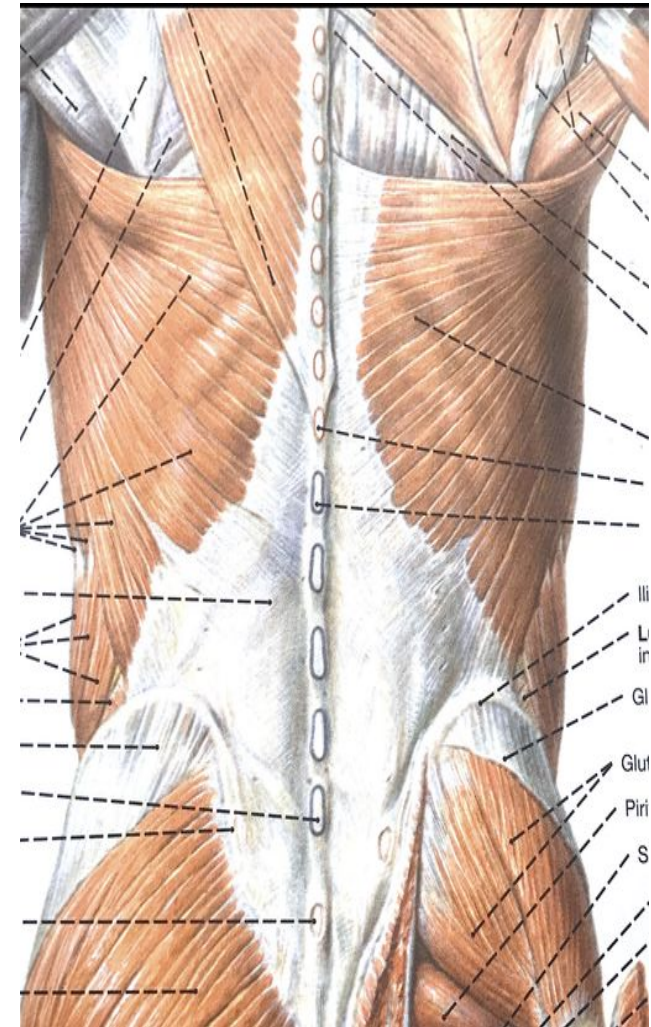
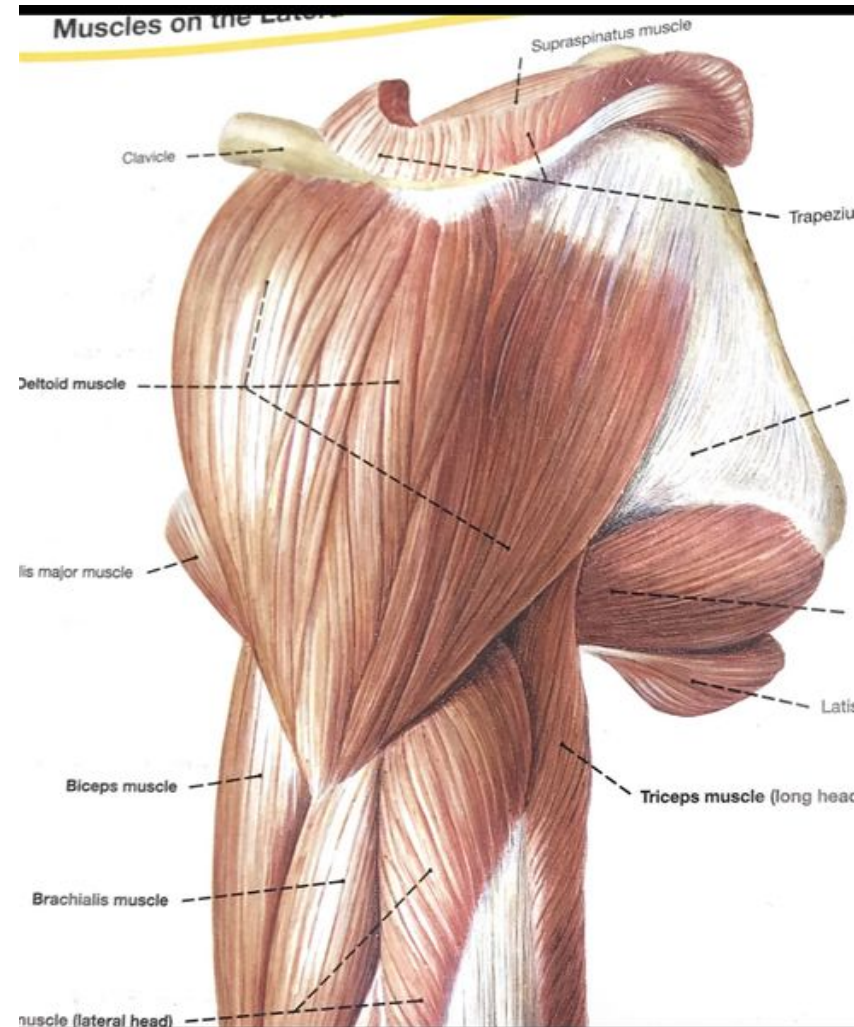


ONE WAY ANTAGONISTIC PAIRS

ANTERIOR DELTOID IS
AGONIST

LATISSIMUS DORSI IS
ANTAGONIST

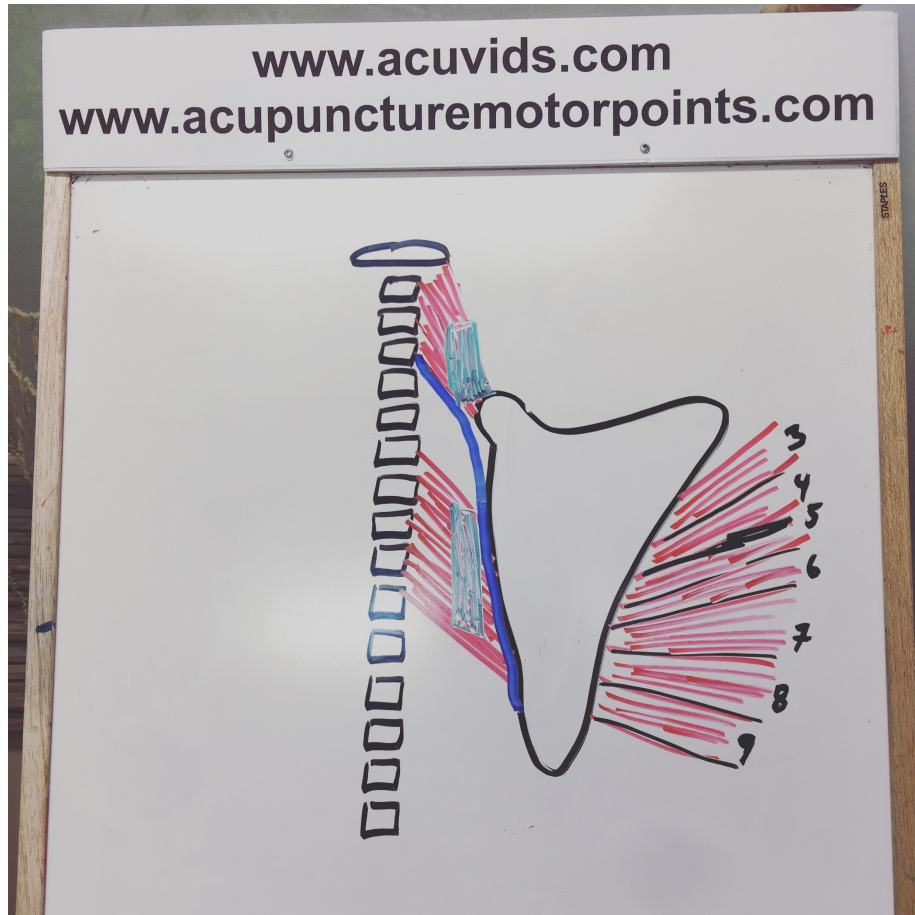
BUT.....



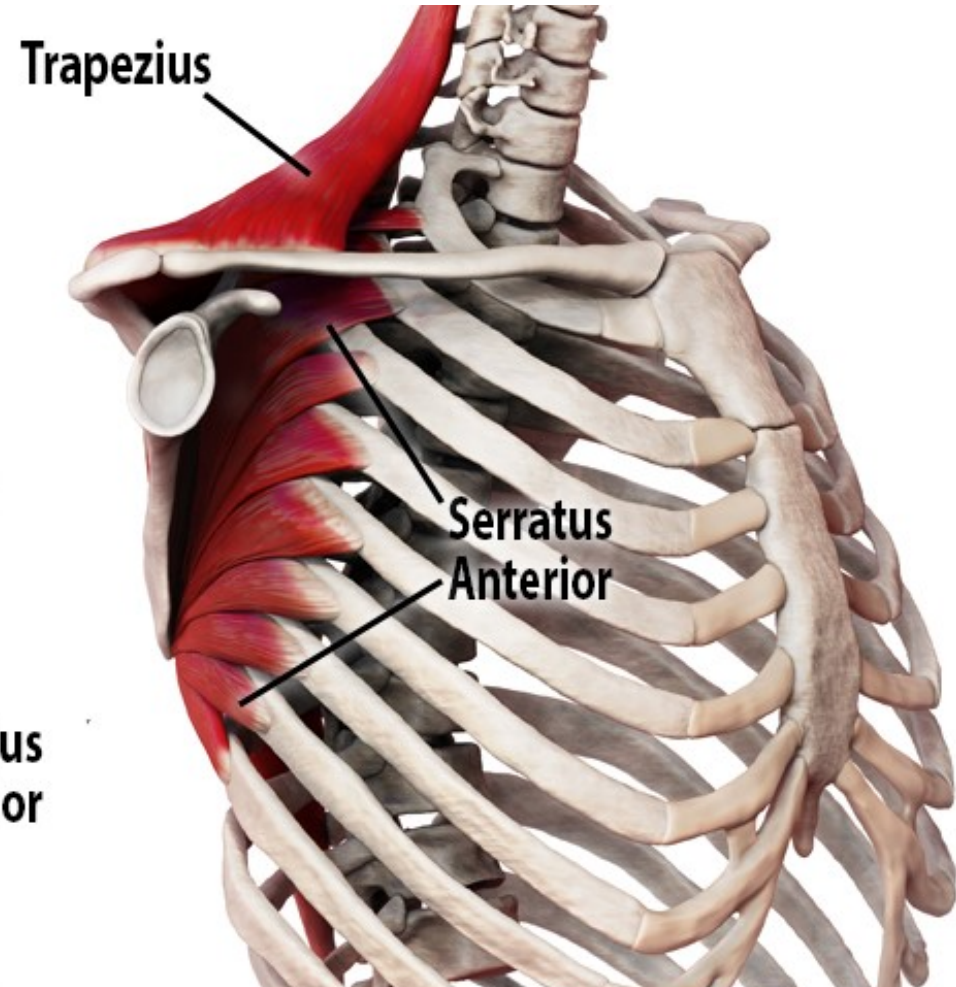
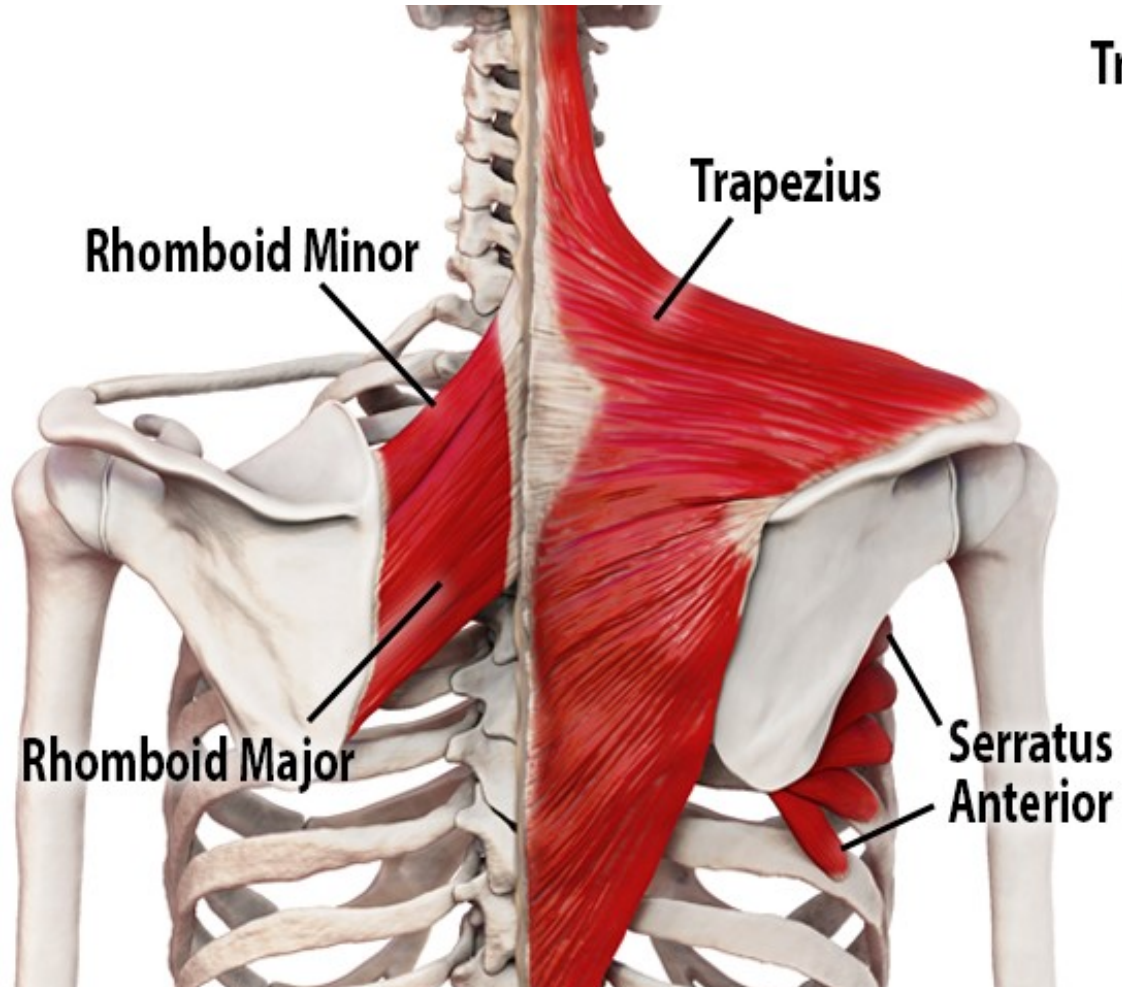
WHAT IS A TWO-WAY ANTAGONISTIC PAIR?

- MUSCLE THAT ARE EXCLUSIVELY ONE ANOTHERS' AGONIST AND ANTAGONIST IN RECIPROCAL INHIBITION
- MOST COMMON TWO-WAY PAIRS
 - ***RECTUS ABDOMINUS – ERECTOR SPINAE**
 - ***TFL – ADDUCTORS**
 - ***PSOAS – GLUTEUS MAXIMUS**
 - ***SERRATUS ANTERIOR – UPPER TRAPEZIUS**
 - ***HAMSTRINGS - QUADRICEPS**

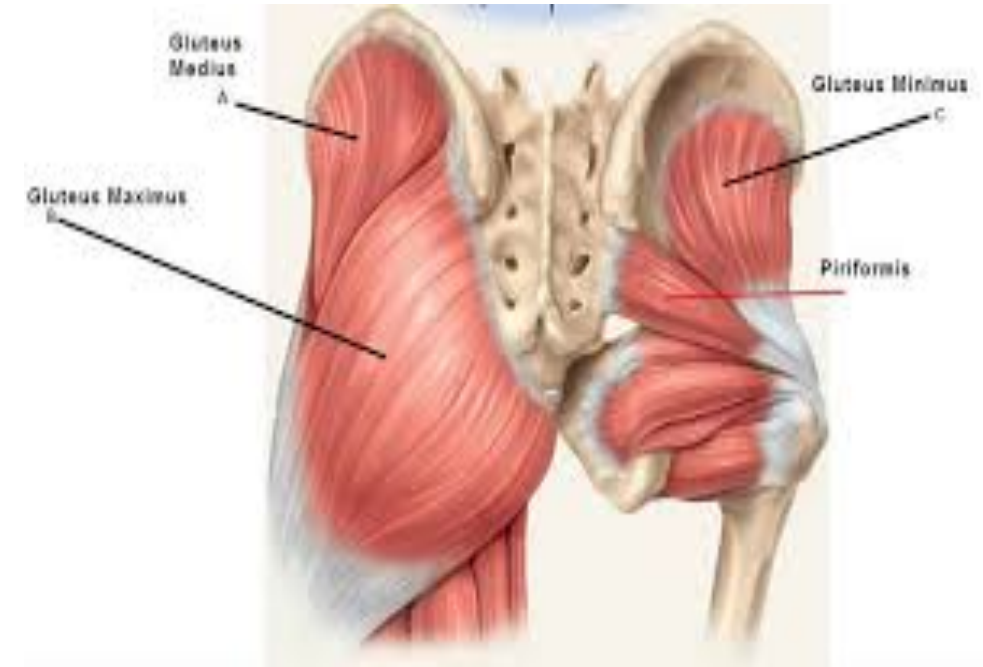
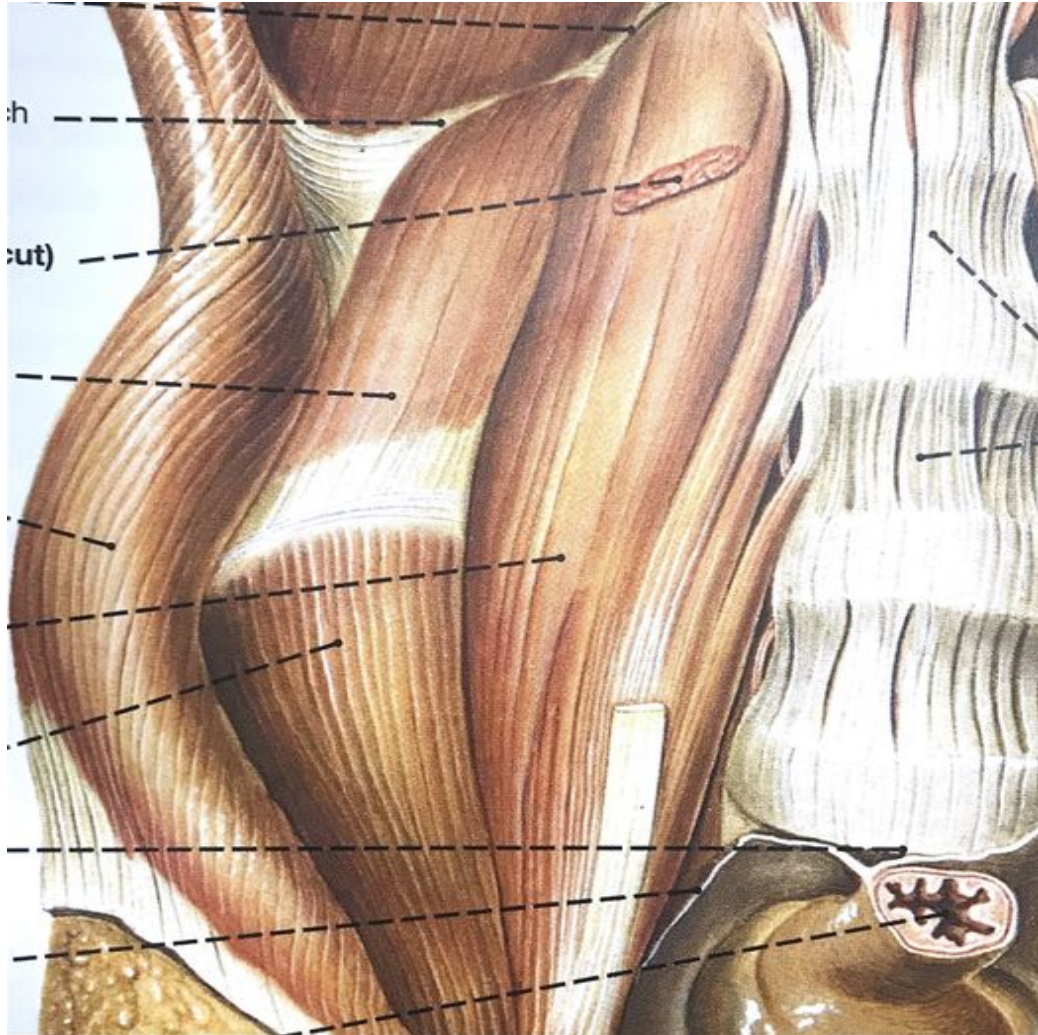
SERRATUS ANTERIOR – UPPER TRAPEZIUS



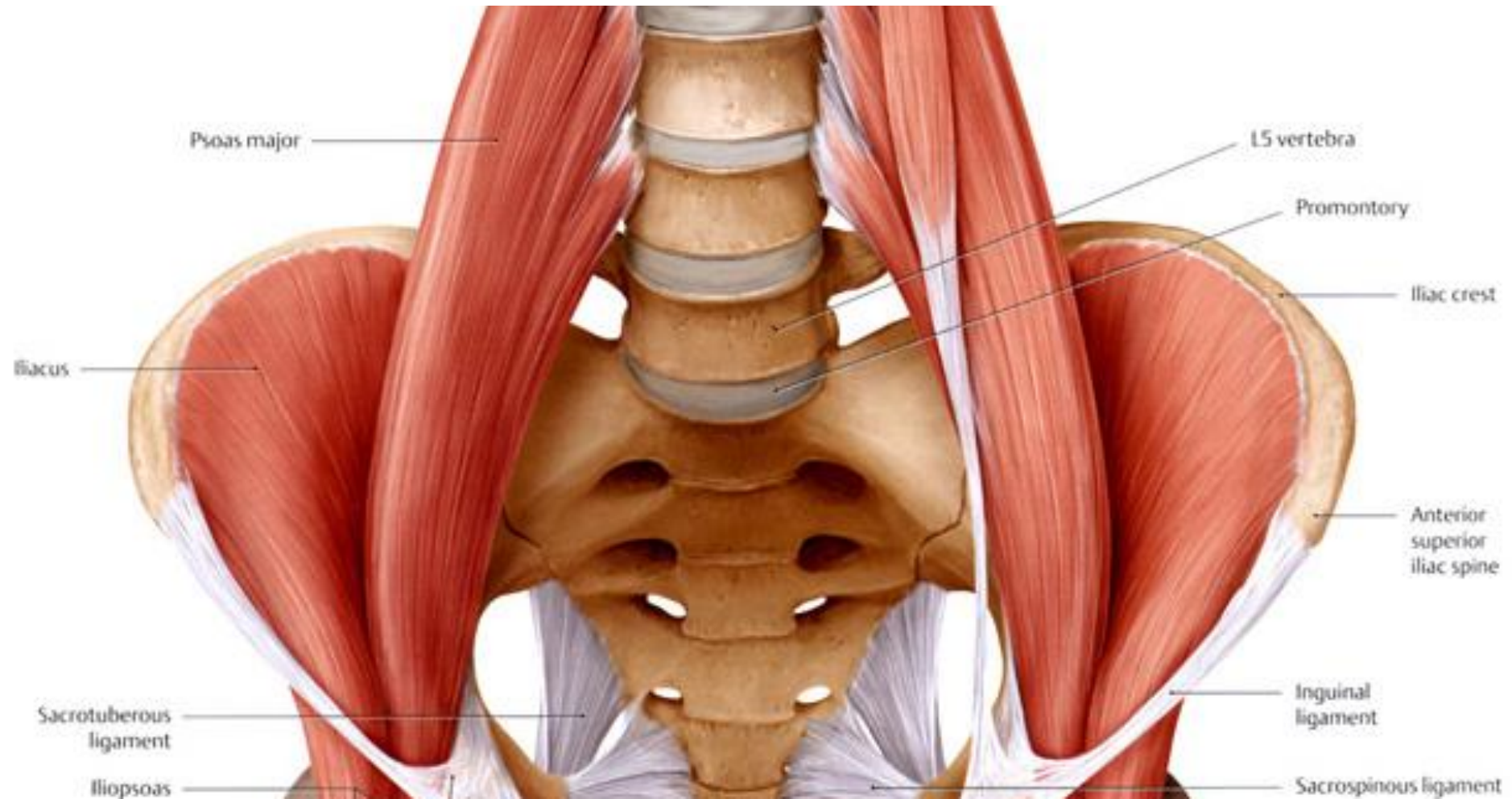
Serratus Anterior - Upper Trapezius



PSOAS – GLUTEUS MAXIMUS



Psoas

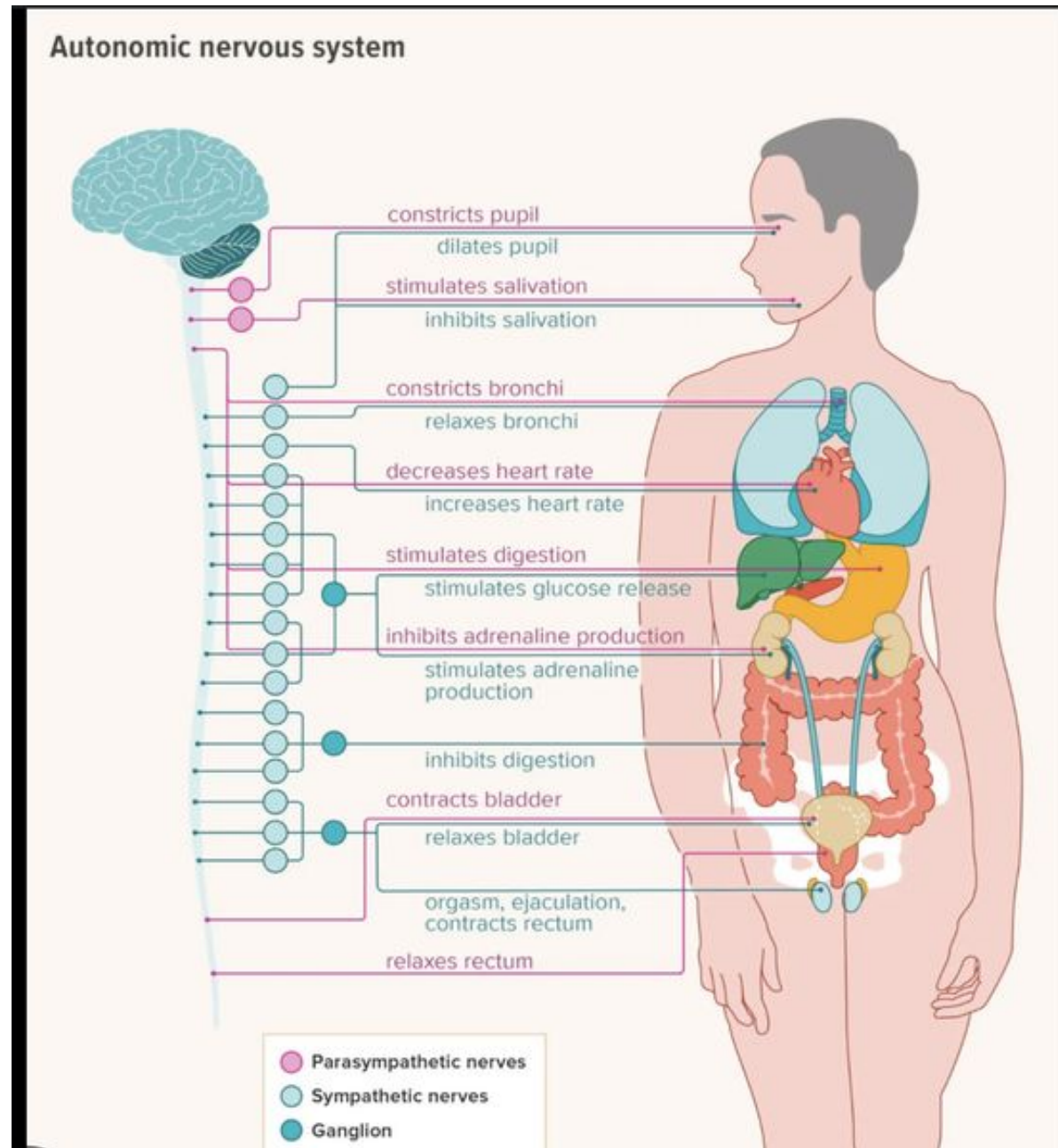


SIGNIFICANCE OF A TRIGGER POINT

- APPEARS AS A CONSEQUENCE OF POOR MECHANICS – NOT THE CAUSE OF POOR MECHANICS
- TIGHT BAND, KNOT, OR TROPHIC CHANGE WITHIN A MUSCLE AND/OR FASCIA
- APPEAR IN THE ANTAGONISTIC MUSCLE WHEN THE AGONIST IS INHIBITED
- MOST CLINICALLY INFLUENTIAL IN *TWO-WAY* ANTAGONISTIC PAIRS

CLASSIFICATION OF PATIENT PAIN PRESENTATION

PNS/SNS



MECHANICAL VS PERFUSION TREATMENTS

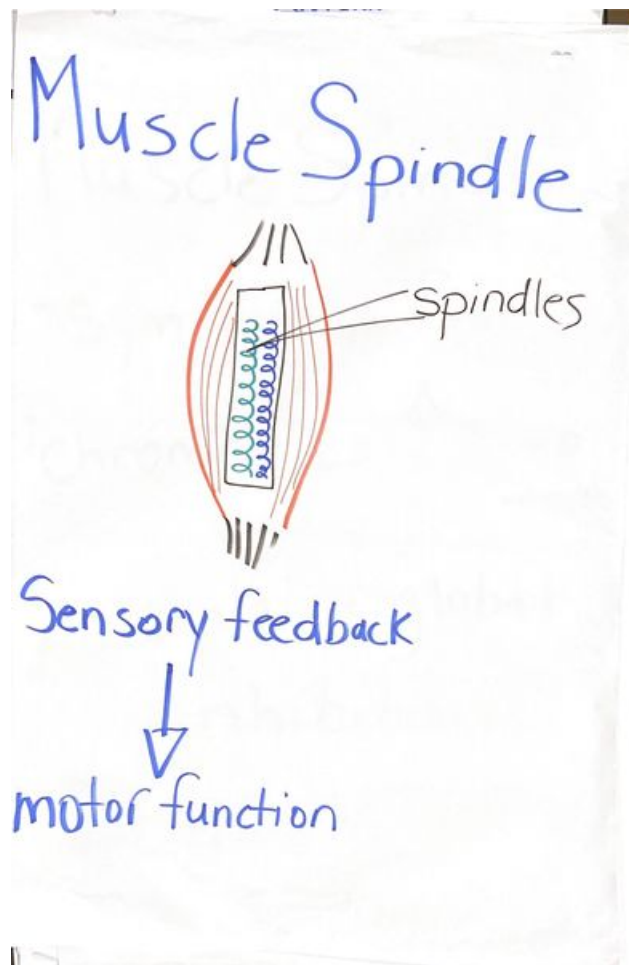
Mechanical vs. Perfusion TREATMENT

Mechanical • 1-2 visits
• find inhibition—correct
• local motor points

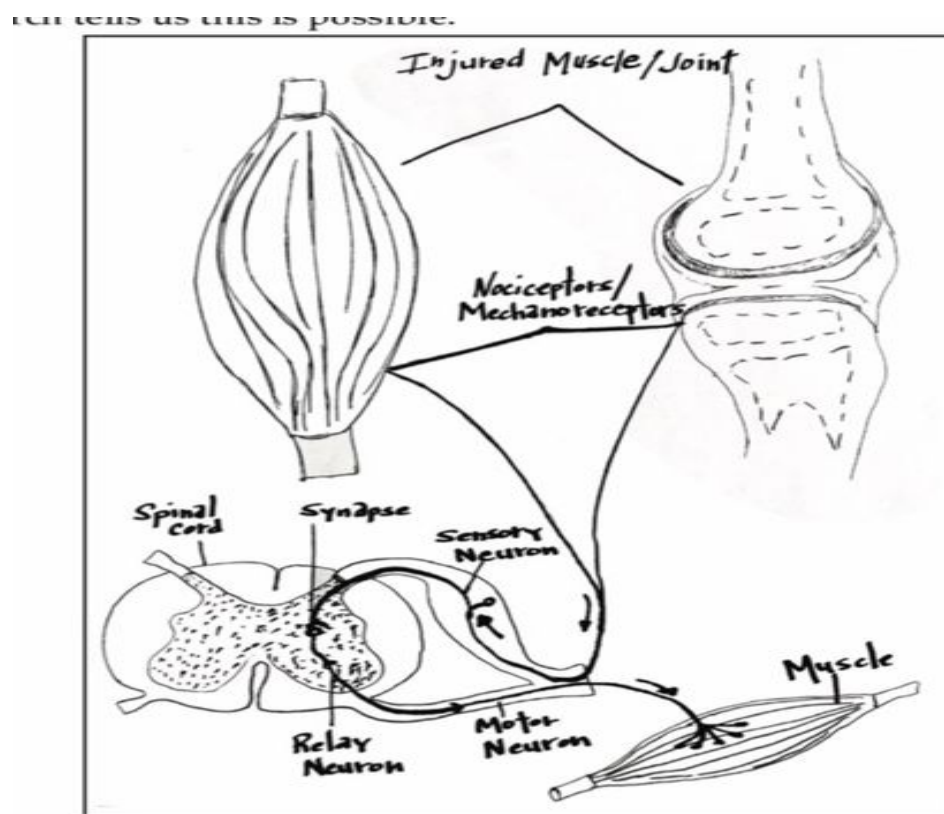
Perfusion • once inhibition corrected
• to help remove trophic Δ 's
• chronic system condition

MANAGING THE CHRONIC-SYSTEMIC PATIENT

MUSCLE SPINDLE SENSITIVITY



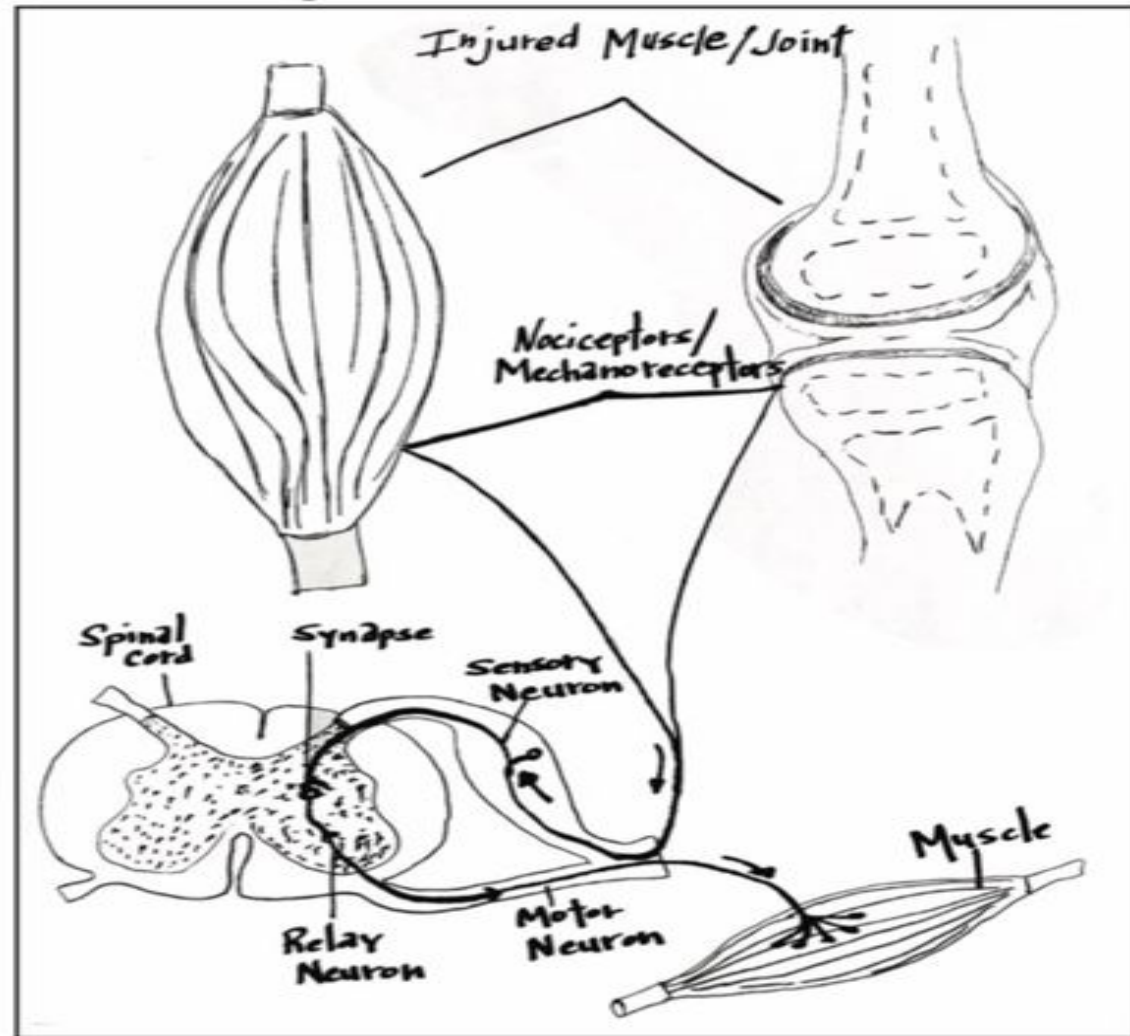
NOXIOUS AMPLIFICATION



SPINAL SEGMENTAL SENSITIZATION (SSS)

- OCCURS IN NOCICEPTIVE AND INFLAMMATORY PAIN
- NOXIOUS STIMULI CONSTANTLY BOMBARD DORSAL HORN
- CAUSES OVER-SENSITIVITY OF THAT SPINAL SEGMENT AND OR THE OVER-SENSITIVITY IN THE SURROUNDING SPINAL SEGMENTS.

can tell us this is possible.



WHAT ARE THE EFFECTS OF SSS?

- OVER SENSITIVE DERMATOME (SKIN) AT THAT CORRESPONDING LEVEL
- FORMATION OF TRIGGER POINTS IN MUSCLE INNERVATED BY THAT LEVEL
- SENSITIVITY OF LIGAMENTS, JOINTS, BONE (SCLEROTOMAL)
- IE. C5 LEVEL: -LATERAL DELTOID SURFACE TENDERNESS
- MUSCLES IT INNERVATES: DELTOID, LEVATOR SCAPULA, RHOMBOID, BICEPS, TERES MAJOR, PECTORALIS MAJOR/MINOR, SERRATUS ANTERIOR
- SCLEROTOME: FRONT AND BACK OF SCAPULA

4 TYPES OF PAIN PRESENTATION

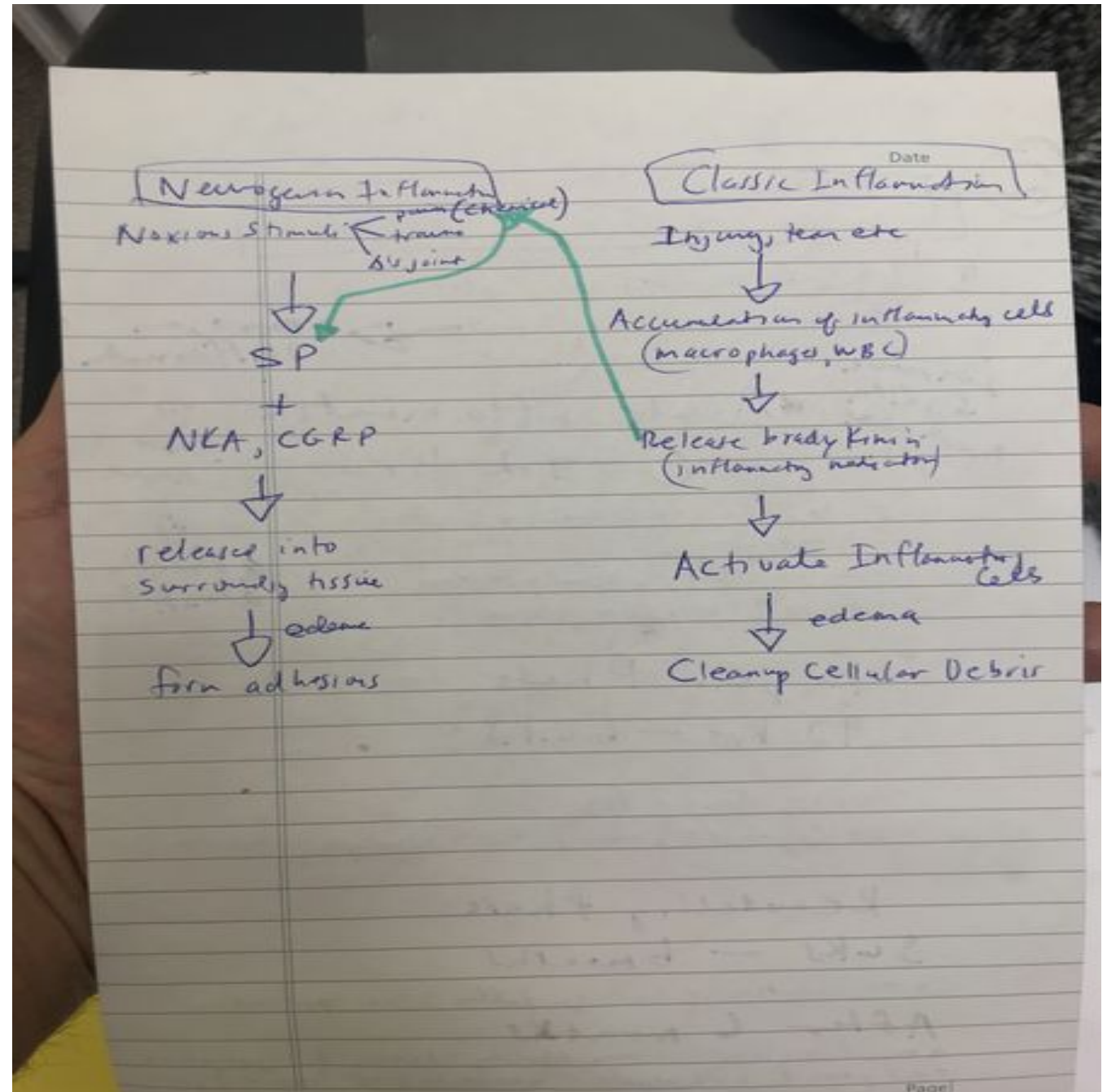
- NOCICEPTIVE
- INFLAMMATORY
- PERIPHERAL NEUROPATHIC
- CENTRAL NEUROPATHIC

NOCICEPTIVE

- NORMAL FUNCTIONING NERVOUS SYSTEM
- NO DIRECT TISSUE INJURY
- NOXIOUS STIMULUS DRIVES NEUROGENIC INFLAMMATION
- SSS (SPINAL SEGMENTAL SENSITIZATION)
- NEUROMODULATE NOCICEPTION – RESTORE FUNCTION
- EG. REPEATED STRAIN, OR REPEATED POSTURE

INFLAMMATORY

- NORMAL FUNCTIONING NERVOUS SYSTEM
- CLASSIC INFLAMMATORY WITH TISSUE INJURY
- BRADYKININ TRIGGERS NI
- NEUROMODULATE NOCICEPTION AND REPAIR SOFT TISSUE TO RESTORE FUNCTION
- EG. SPORTS INJURY (ANKLE SPRAIN)



PERIPHERAL NEUROPATHIC

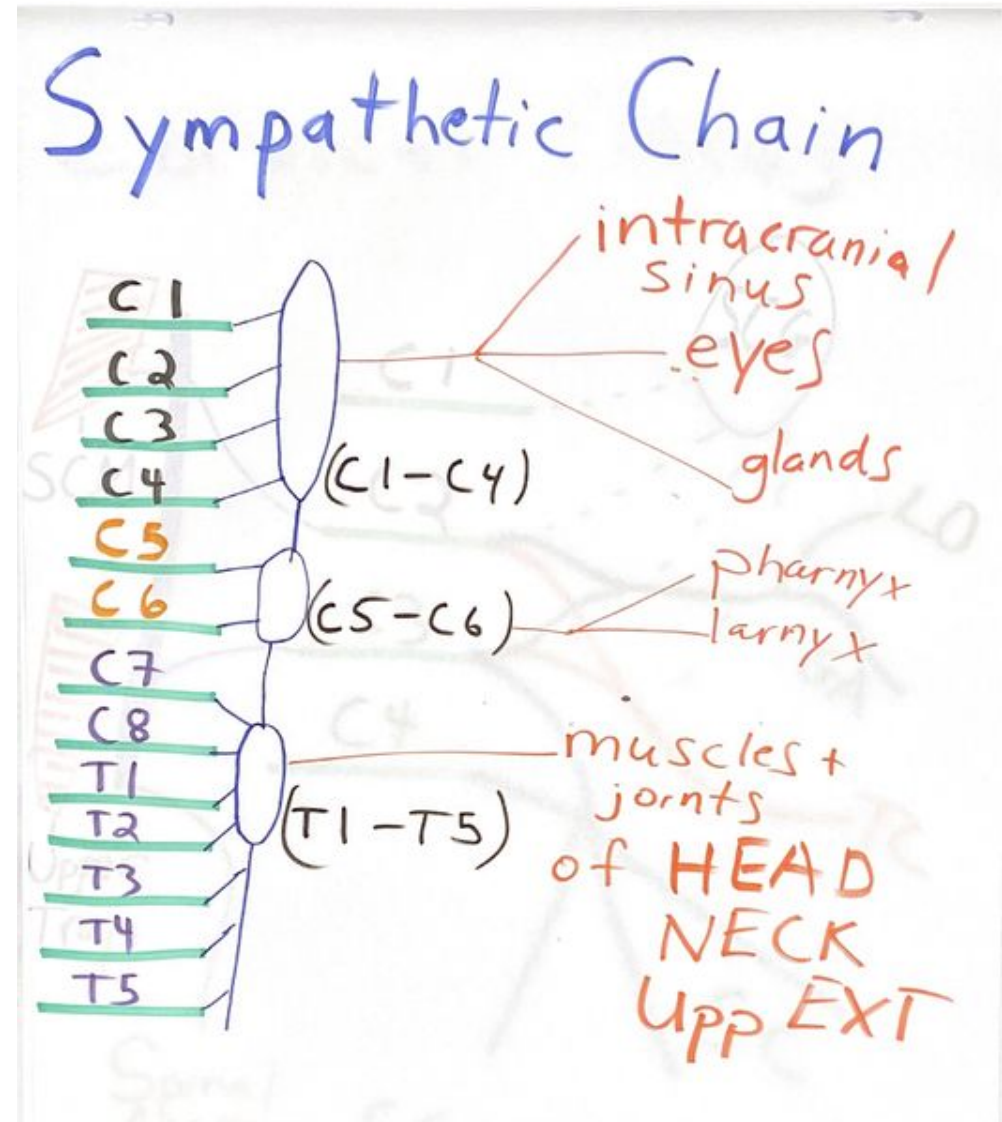
- ALTERED NERVOUS SYSTEM FUNCTION
- BURNING, SHOOTING, ELECTRIC, PARATHESIA
- SIGNS OF TROPHIC CHANGES: COLOR CHANGE, ATROPHY
- SIGNS ARE DISTAL TO INJURY SITE
- EG. NERVE COMPRESSION OR NERVE CRUSH
- NEUROMODULATE PAIN, REMOVE & REPAIR SOFT TISSUE DEBRIS
- INCLUDES MOTOR POINT WORK TO REVERSE CHANGES IN NERVE COMPRESSION INJURY

CENTRAL NEUROPATHIC

- ALTERED FUNCTION OF CNS
- PAIN NOT PROPORTIONATE TO TISSUE INJURY
- PAIN IS HYPERAMPLIFIED BY STIMULUS
- CHRONIC SYSTEMIC PATIENT PRESENTATION
- HIGH SYMPATHETIC TONE
- EG. CHRONIC PAIN PATIENT, FIBROMYALGIA ETC
- MULTIMODAL TREATMENT APPROACH (MEDITATION, PSYCH COUNSELLING, YOGA/BREATHING, ACUPUNCTURE, LIGHT SOFT TISSUE, MEDICATION WHERE NEEDED (IE. SLEEP AID)).

SYMPATHETICS IN MECHANICAL INJURY

- WHIPLASH AFFECTING C5-C7 CAN CAUSE INHIBITION IN THE SERRATUS ANTERIOR
- GETTING HIT INTO THE BOARDS IN HOCKEY CAN CAUSE INHIBITION OF THE SERRATUS ANTERIOR WHICH CAUSES SPINAL SENSITIZATION AT C5-C7,
- BOTH OF THE ABOVE SCENARIOS INFLUENCE THE SYMPATHETIC NERVOUS SYSTEM. IN THIS CASE T1-T5 (INFERIOR CERVICAL SYMP CHAIN) PROVIDE BLOODFLOW TO MUSCLES AND JOINTS OF HEAD, NECK, AND UPPER EXT.
- SSS CAN BE INFLUENCED BY INSUFFICIENT PERFUSION CONTRIBUTION BY THE AUTONOMIC NERVOUS SYSTEM
- FASCIAL INNERVATED BY ANS (SMOOTH MUSCLE)

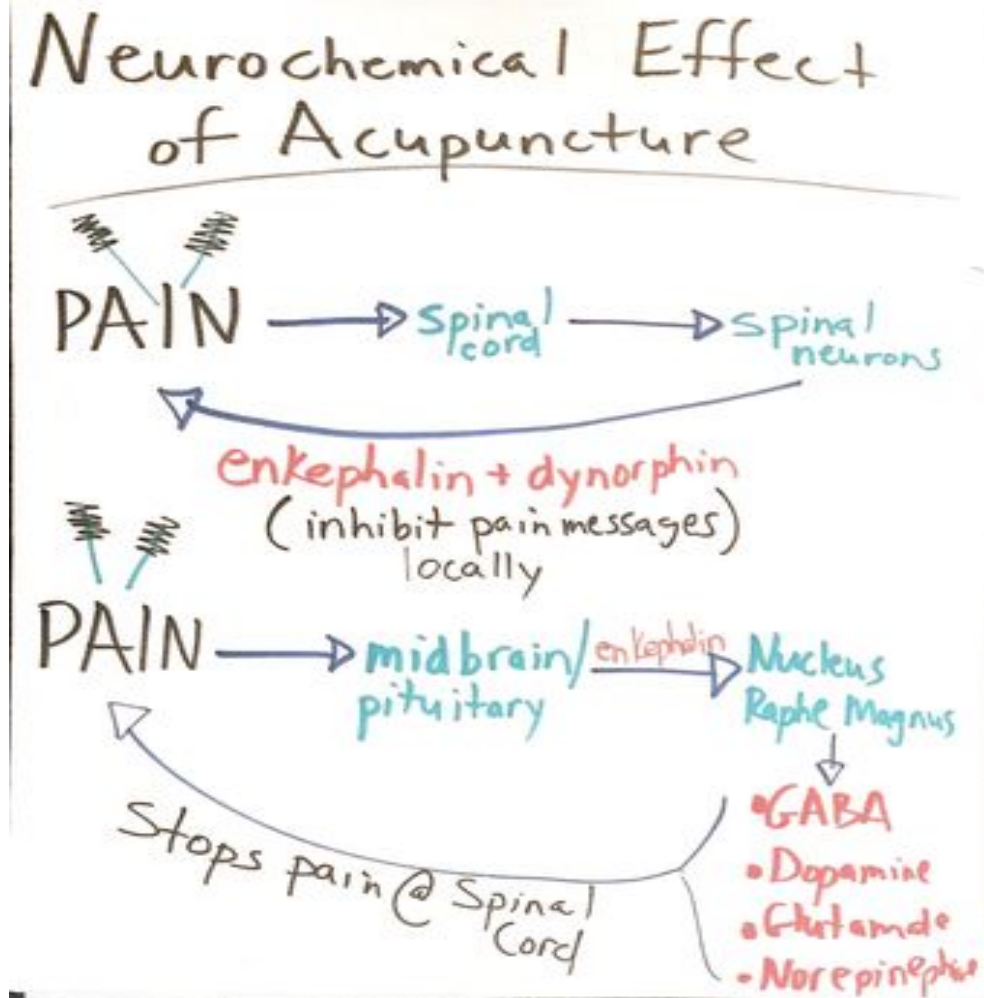


NEEDLING TECHNIQUES WITH & WITHOUT ELECTRICAL STIMULATON

PAIN MECHANISMS OF ACUPUNCTURE

- GATE CONTROL THEORY
- CONTROLLED PAIN MODULATION

SOURCE OF DIAGRAM:
BIOMEDICAL
ACUPUNCTURE FOR
PAIN MANAGEMENT



GATE CONTROL THEORY – USES PAINLESS STIM

- NOXIOUS STIMULUS PROJECT FROM PERIPHERAL NERVOUS SYSTEM TO THE BRAIN AND THERE ARE PERCEIVED AS PAIN
- NON-NOXIOUS STIMULATION HAVE THE ABILITY TO REDUCE THE NOXIOUS STIMULI BY “GATING” THEM FROM GAINING ACCESS TO THE CENTRAL NERVOUS SYSTEM/BRAIN.
- NON-NOXIOUS STIMULATION WILL OVERRIDE THE NOXIOUS STIMULUS VIA INHIBITORY NEURONS.
- ACUPUNCTURE, EXERCISE, TENS, MEDITATION ALL EXAMPLES
- PRE-CLASSIFICATION (MECHANICAL VS CHRONIC SYSTEMIC) OF CONDITION IS KEY

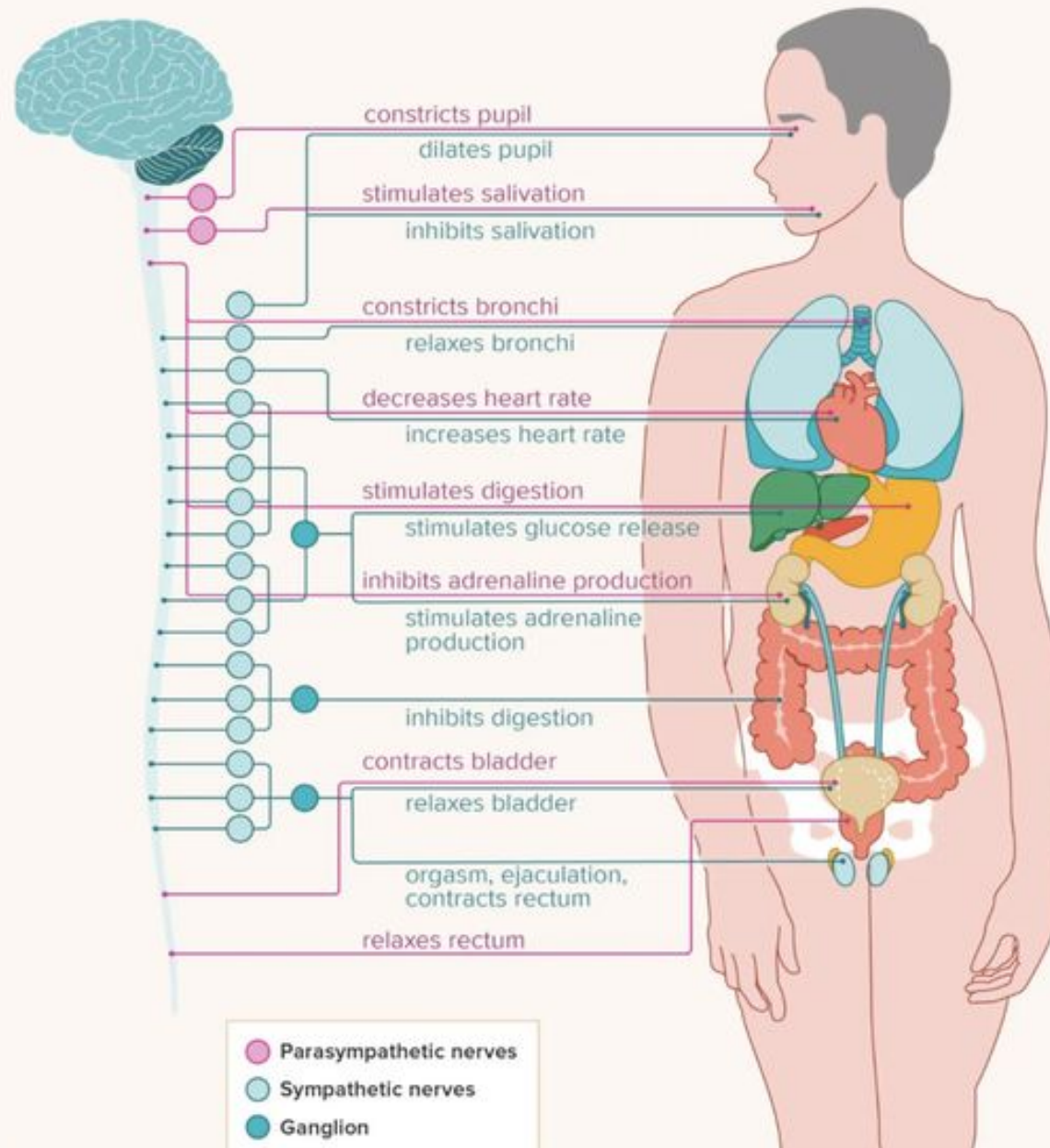
CONTROLLED PAIN MODULATION – USES PAIN

- DIFFERENT THAN USING NON-NOXIOUS STIMULUS TO REDUCE PAIN
- CPM OR DNIC (DIFFUSE NOXIOUS INHIBITORY CONTROL) STATES THAT WHEN A NOXIOUS STIMULUS IS ADDED TO AN AREA DISTANT TO THE AREA OF INJURY – PAIN IS SIGNIFICANTLY DIMINISHED.
- MANUAL SOFT TISSUE WORK IS OFTEN SOMEWHAT NOXIOUS AND IS USUALLY PERFORMED AWAY FROM THE AREA OF COMPLAINT.
- CAN EXPLAIN WHY SOFT TISSUE PLAYS SUCH AN INTEGRAL PART IN PAIN REDUCTION AND SOFT TISSUE REPAIR.

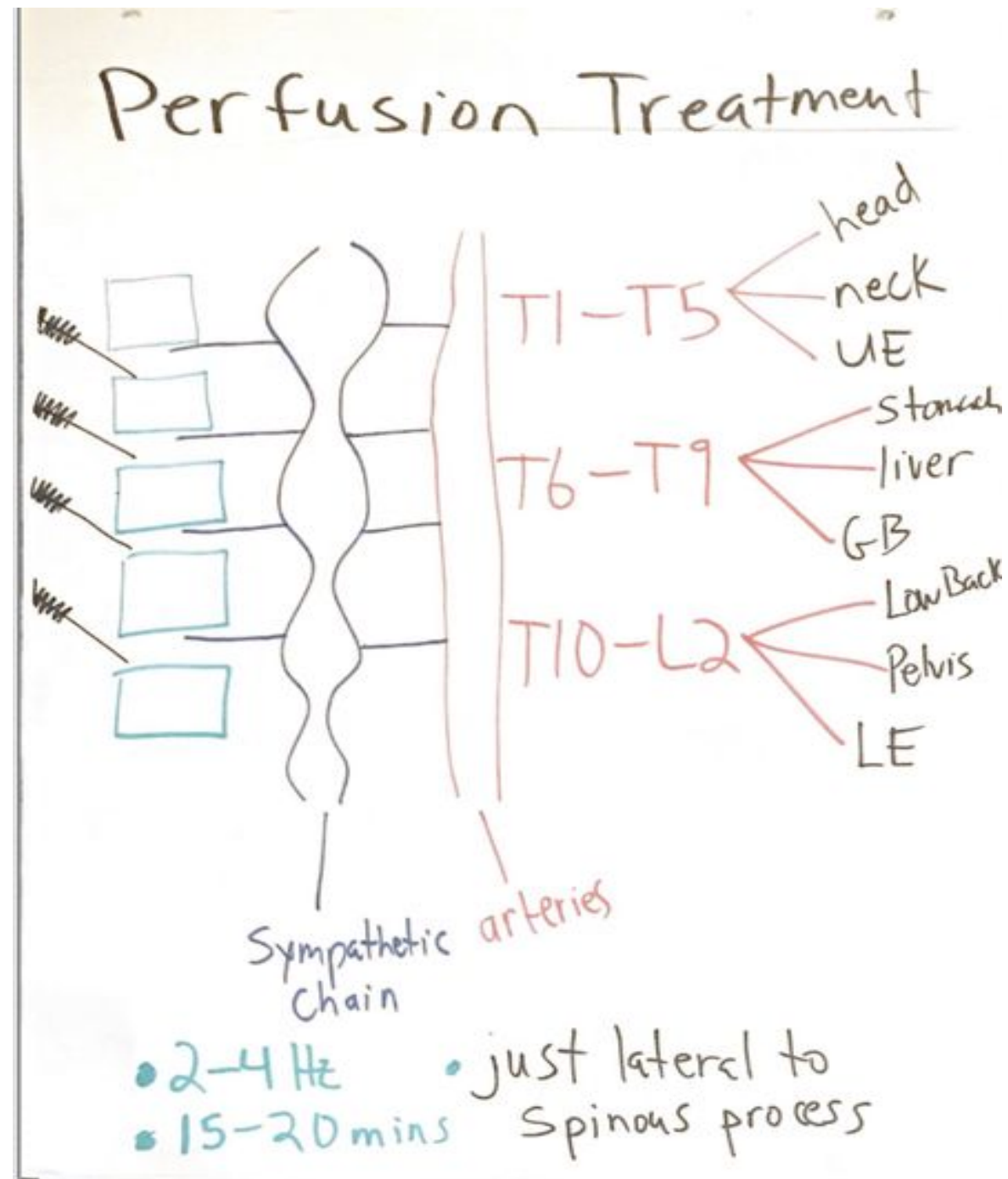
NEEDLING PROTOCOLS

PNS/SNS

Autonomic nervous system



PERFUSION TREATMENT: BLOOD RESTORED



RENOVATION TECHNIQUES

RENOVATION NEEDLING TECHNIQUES

- USED TO REDUCE PAIN & NEUROGENIC INFLAMMATION
- USED TO PRECEDE SOFT TISSUE WORK
- KEY IN TISSUE RE-MODELLING

TYPES:

-INLINE TECHNIQUE

-TWO NEEDLE

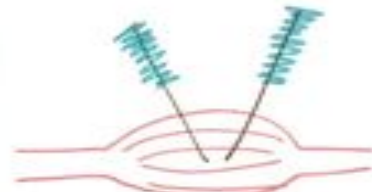
-OFFSETTING FREQUENCY

-INTRA-ARTICULAR APPROACH

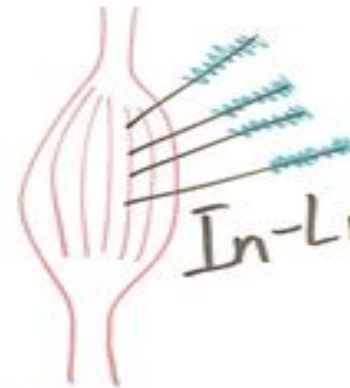
IN-LINE & 2 NEEDLE TECHNIQUES

EA Neuromodulation Techniques (restructure)

- after inhibition removed
- done to ↓ neurogenic inflammation
- restructure soft tissue



2 NT

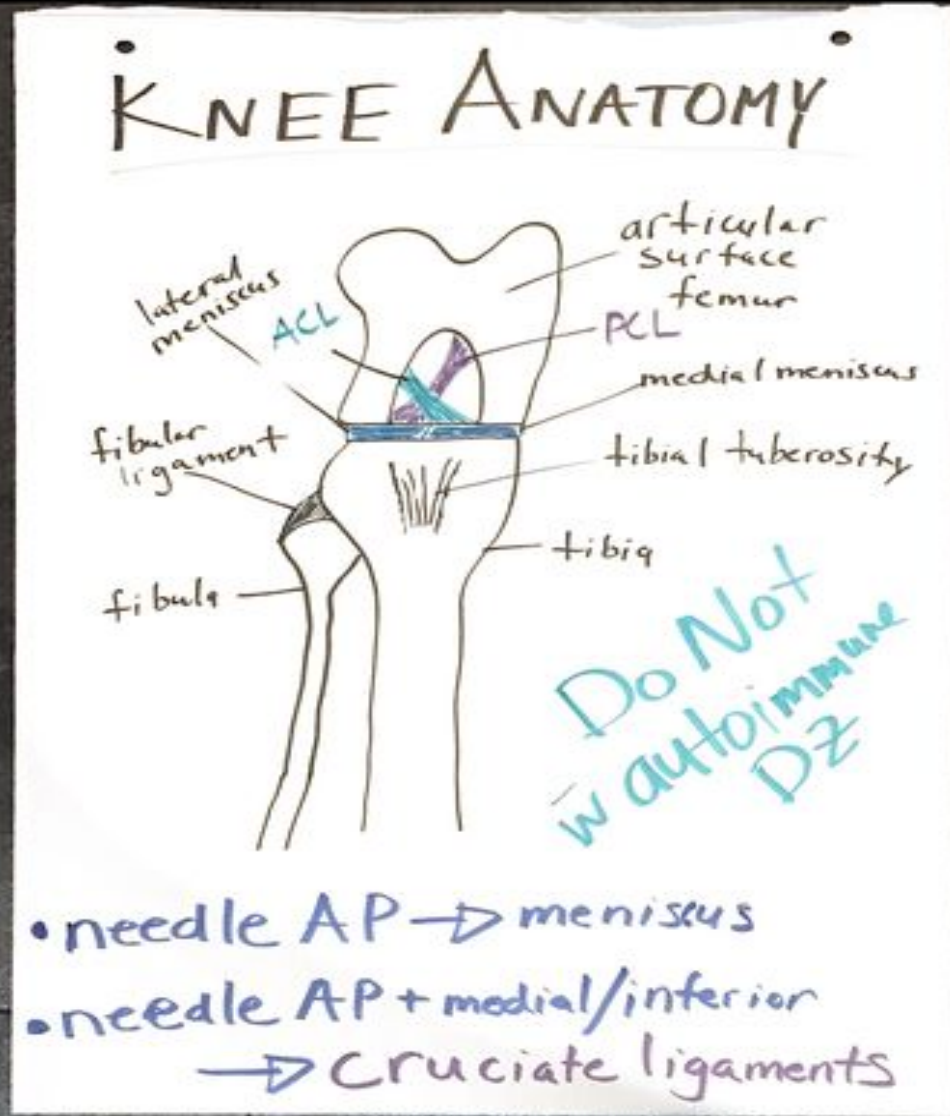


In-Line

- 2-4 Hz
- 10-12 min

JOINT TREATMENT TECHNIQUE

POST-TRAUMATIC ARTHRITIS



PTOA (post-traumatic OA)



TRAUMA:

- Collagen rupture
- loss glycosaminoglycans
- degradation of chondrocytes
- fragments absorbed into synovium

↓ lubrication ↑ OA



EFFECTS OF POST –TRAUMATIC OSTEOARTHRITIS

PRE/POST TRAUMA EFFECTS



HIP OSTEOARTHRITIS



HALLUX RIGIDUS



Joint Needling for OA

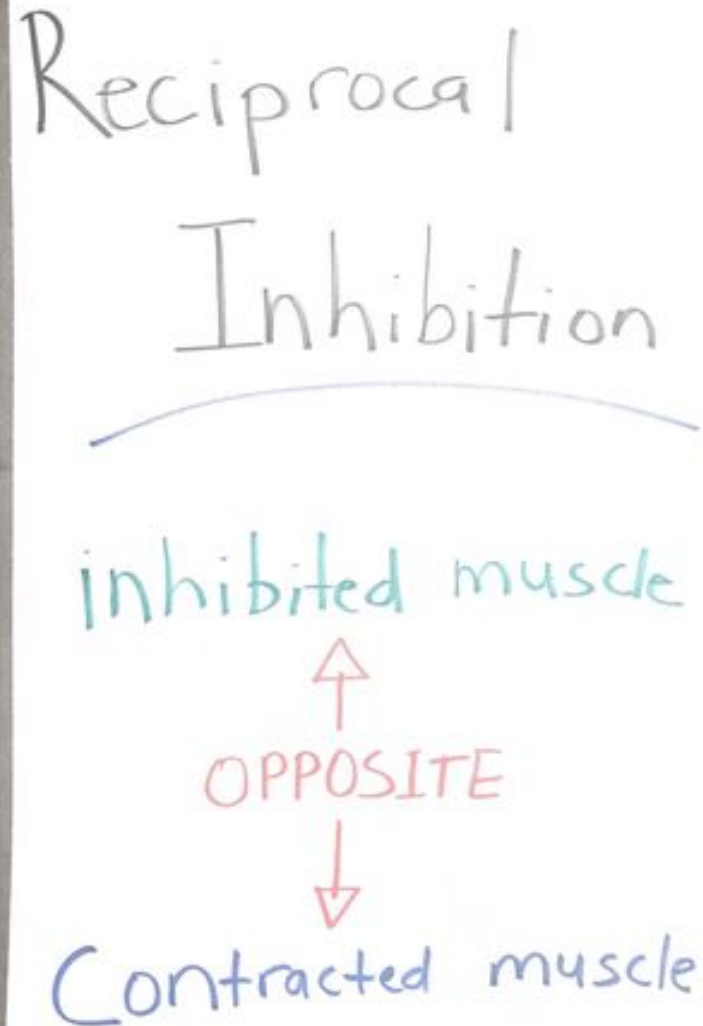
- Amer Jour Transitional Rs
 - pretreatment in OA patients
 - $\uparrow T_2$ MRI values
- $\uparrow T_2 = \uparrow H_2O = \text{loss cartilage}$
- EA, 20Hz, 10min @ EX-LE4/5
- $\downarrow T_2 = \downarrow H_2O = \uparrow \text{collagen Scaffolding}$

JOINT RESTORATION:
INTRA-ARTICULAR

SENSORY/MOTOR TREATMENT

RECIPROCAL INHIBITION

- Pairs of muscles that move in instant opposite directions
- agonist moves muscles and antagonists does not oppose movement
- ie. Biceps brachii/triceps
- **MOTOR INHIBITION DISRUPTS RECIPROCAL INHIBITION FROM WORKING CORRECTLY.**

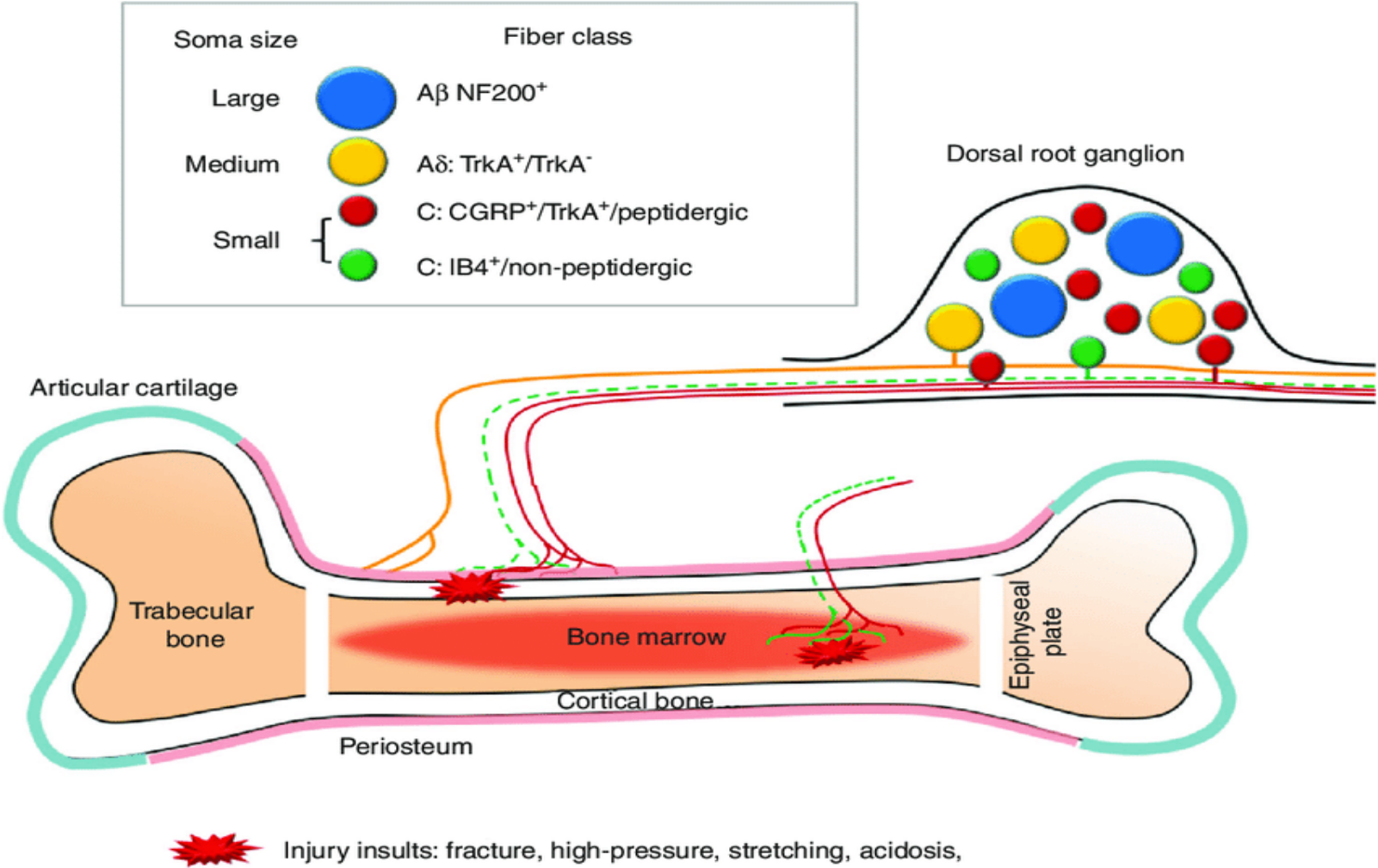


OFF-SETTING FREQUENCIES

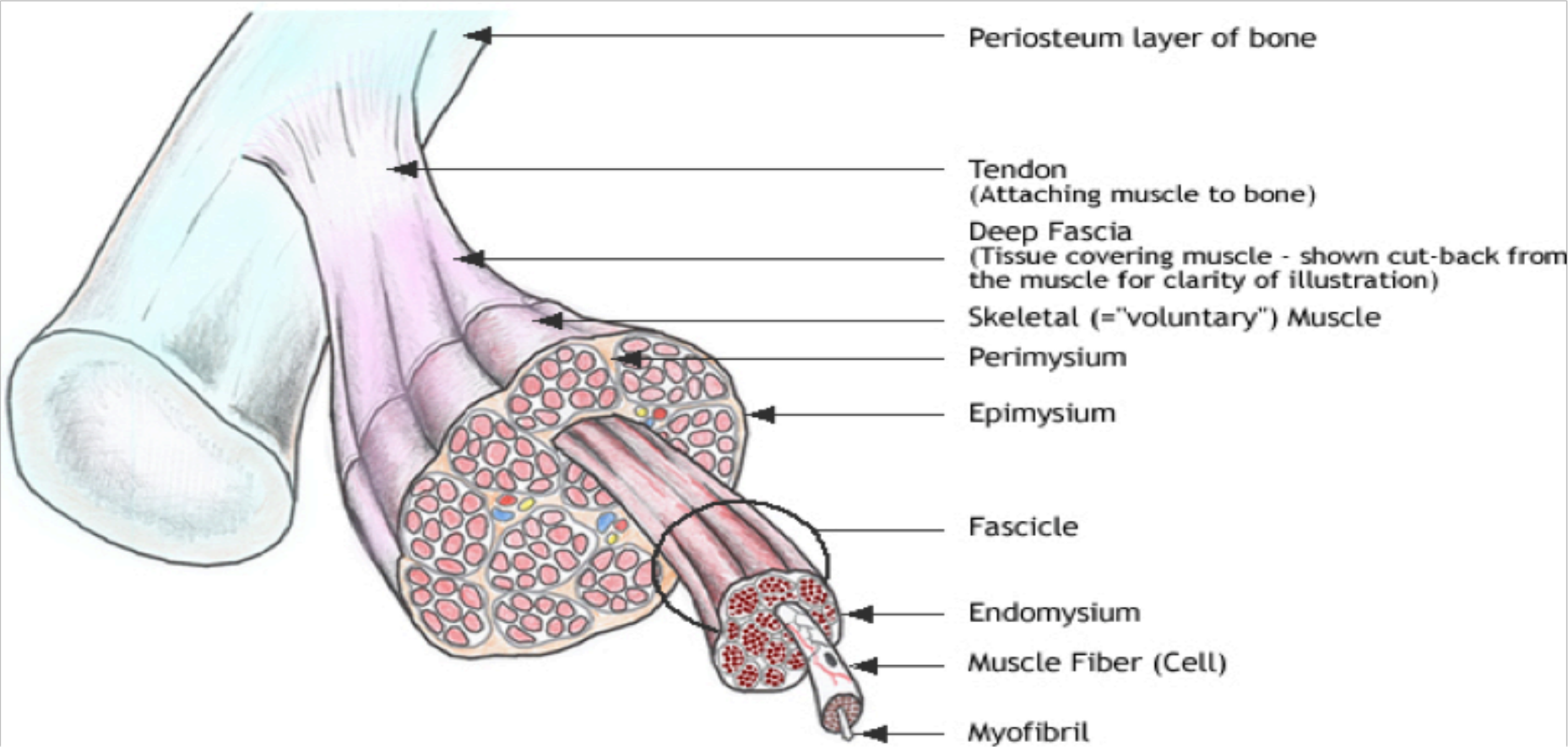
- USE ANTAGONISTIC MUSCLE GROUPS IE. PRONATOR/SUPINATOR, INVERTER/EVERTER, BICEP/TRICEP ETC.
- USE TWO ITO UNITS
- SET ONE TO 2 HZ AND THE OTHER TO 5-6 HZ.
- USED TO RESTORE PROPRIOCEPTION AFTER JOINT/MUSCLE INJURY

MUSCULO-TENDINOUS INJURY TREATMENT

NEUROLOGY OF BONE



FASCIAL/PERIOSTEAL
CONNECTION



COMMON FASCIAL/PERIOSTEAL LOCATIONS

- LATERAL EPICONDYLE OF ELBOW
- PSIS
- ACROMION PROCESS
- GREATER TROCHANTER

High Freq Electroacupuncture

WHEN: Sclerotomal pain
(dull, ill-defined, deep)

WHERE: joint, ligament, capsule,
bone, skin, scar.

WHY: reduce pain, ↓ hypersensitivity
(neuromodulate before manual)

WHAT: 100 Hz, self-guided,
15-20 min

BONE, JOINT, LIGAMENT: HIGH
FREQUENCY

NEUROREFLEXIVE FASCIAL TREATMENT

Fascial Pecking

- Psoas

- neuromodulate hip / low back
via abdominal fascial
(lumbar plexus)

- SCM

- neuromodulate neck + arm
via brachial plexus

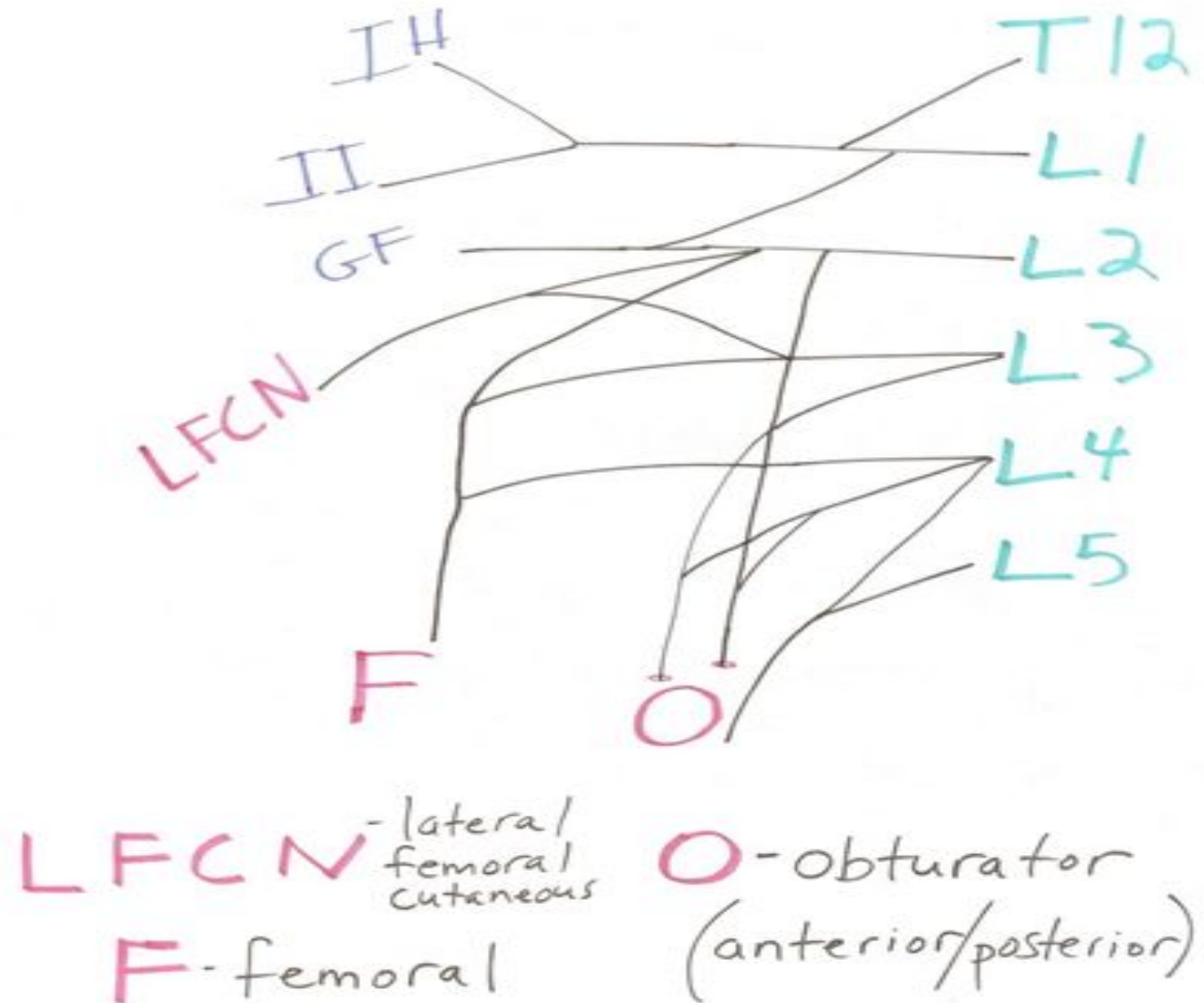
- Sub-clavicular

- neuromodulate shoulder via
Subclavius + pectoralis major

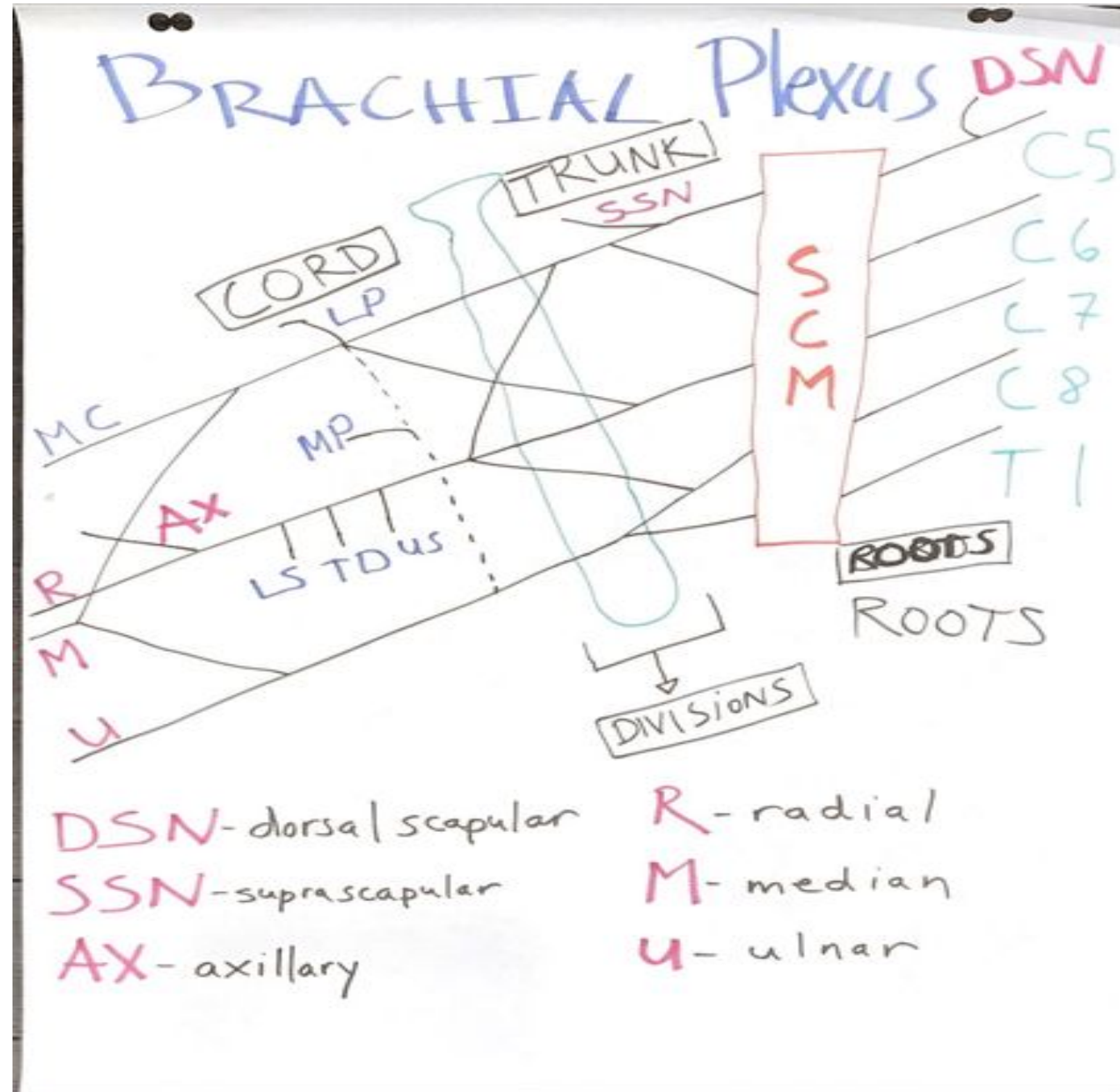
ONE NEEDLE WONDER:
FASCIAL PECKING

PSOAS PECKING: LUMBAR PLEXUS NEUROMODULATION

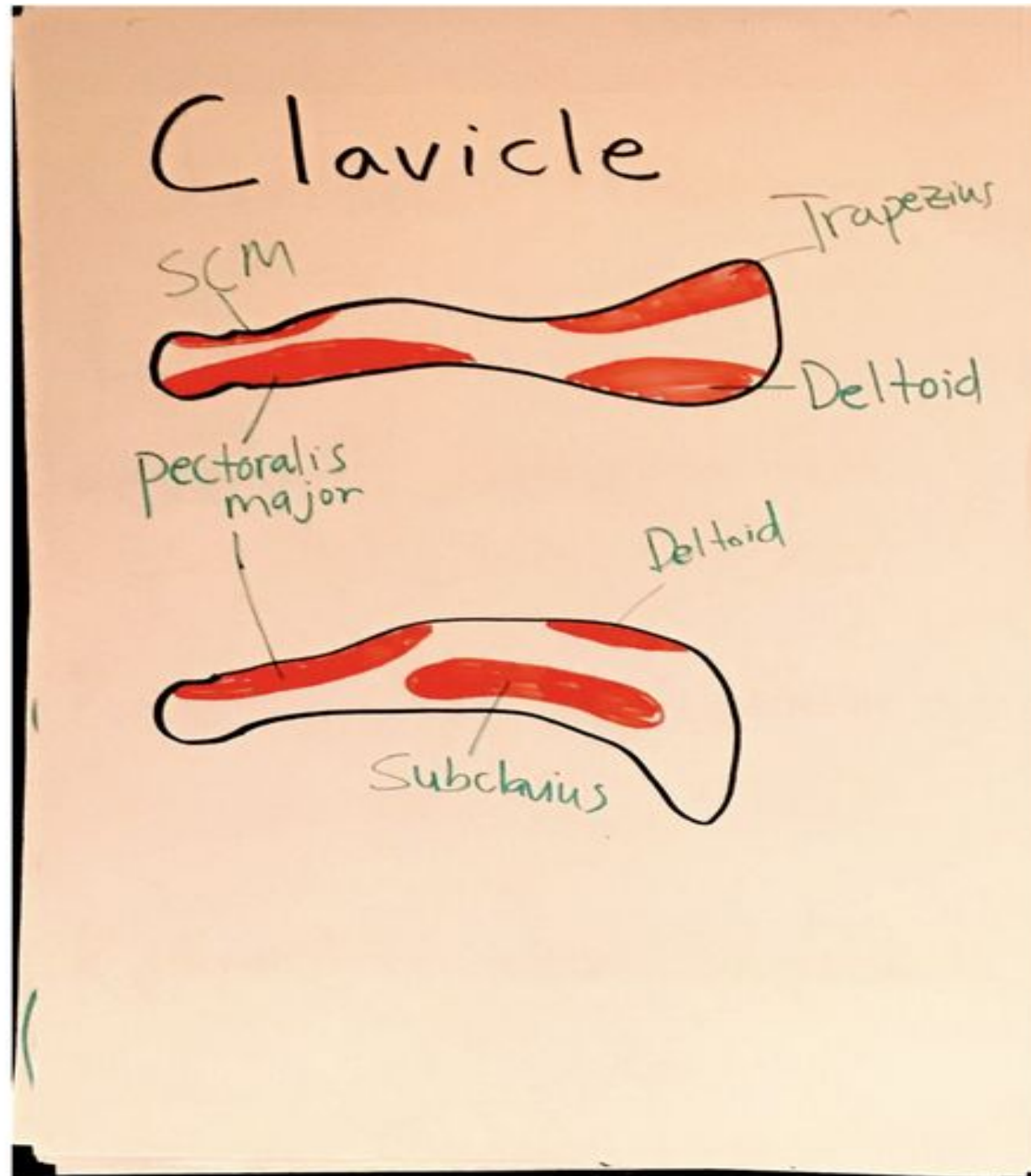
LUMBAR Plexus



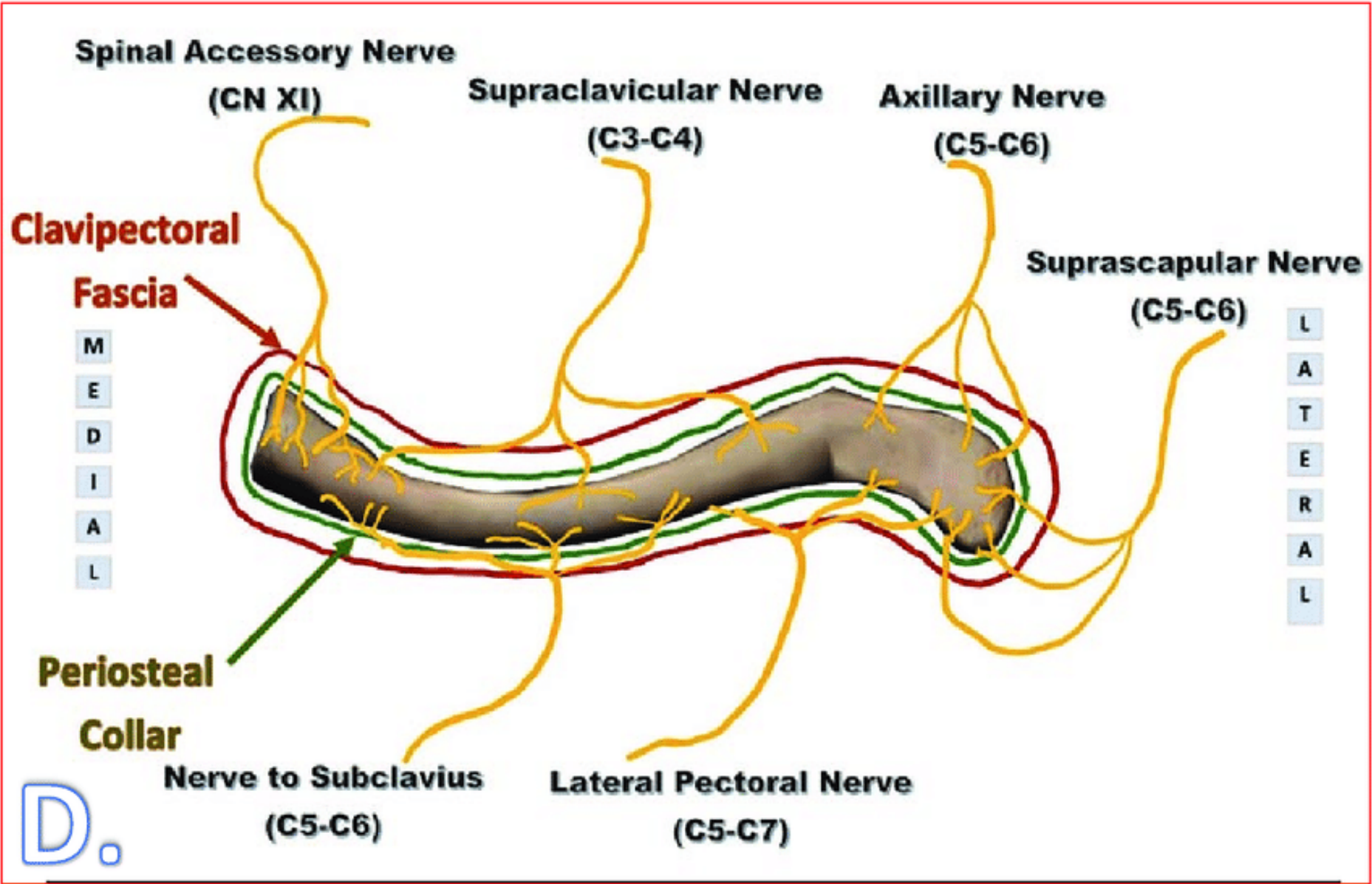
SCM: BRACHIAL PLEXUS NEUROMODULATION



SUB-CLAVICULAR PECKING



CLAVICULAR FASCIAL
INNERVATION



ENTRY POINT OF ENERGY TECHNIQUE

WHEN TO USE IT AND WHY?

- AFTER WE RESTORE MOTOR ACTIVATION, AFTER WE ADDRESS THE TROPHIC CHANGES IN TISSUE DUE TO MALADAPTION, AND AFTER WE RESTORE LOCAL SOFT TISSUE MECHANICS – WE MUST KEEP IN MIND THE INCOMING FORCES AT THE ENTRY POINTS OF ENERGY.
- LEARNING TO ADDRESS THE FOOT/ANKLE IN THE LOWER EXTREMITY AND THE WRIST/HAND WILL BE NECESSARY TO REMOVE MALADAPTATIONS.
- I USE IT WHENEVER THE PATIENT PRESENTING TO ME HAS HAD THE PROBLEM FOR 3 MONTHS OR GREATER.

ENTRY POINTS OF ENERGY

- DIRECTION OF MOVEMENT THAT JOINTS ENCOUNTER DURING A PRIMARY MOVEMENT. IE: DURING SHOULDER FLEXION THE JOINT SLIDES SLIGHTLY BEFORE GOING INTO FLEXION.
- THIS SLIDE IS REFERRED TO AS AN ACCESSORY MOVEMENT
- AS ENTRY JOINT POINTS BECOME INJURED THEY REDUCE THEIR ABILITY TO USE ACCESSORY MOVEMENT – RESULTING IN THE ABNORMAL ABSORPTION AND DISPERSMENT OF ENERGY ALONG THE KINETIC CHAIN.
- UNDER NORMAL CIRCUMSTANCES, WALKING SHOULD BE A UNIQUE AND DIFFERENT MOVEMENT WITH EVERY STEP

JOINT VARIABILITY

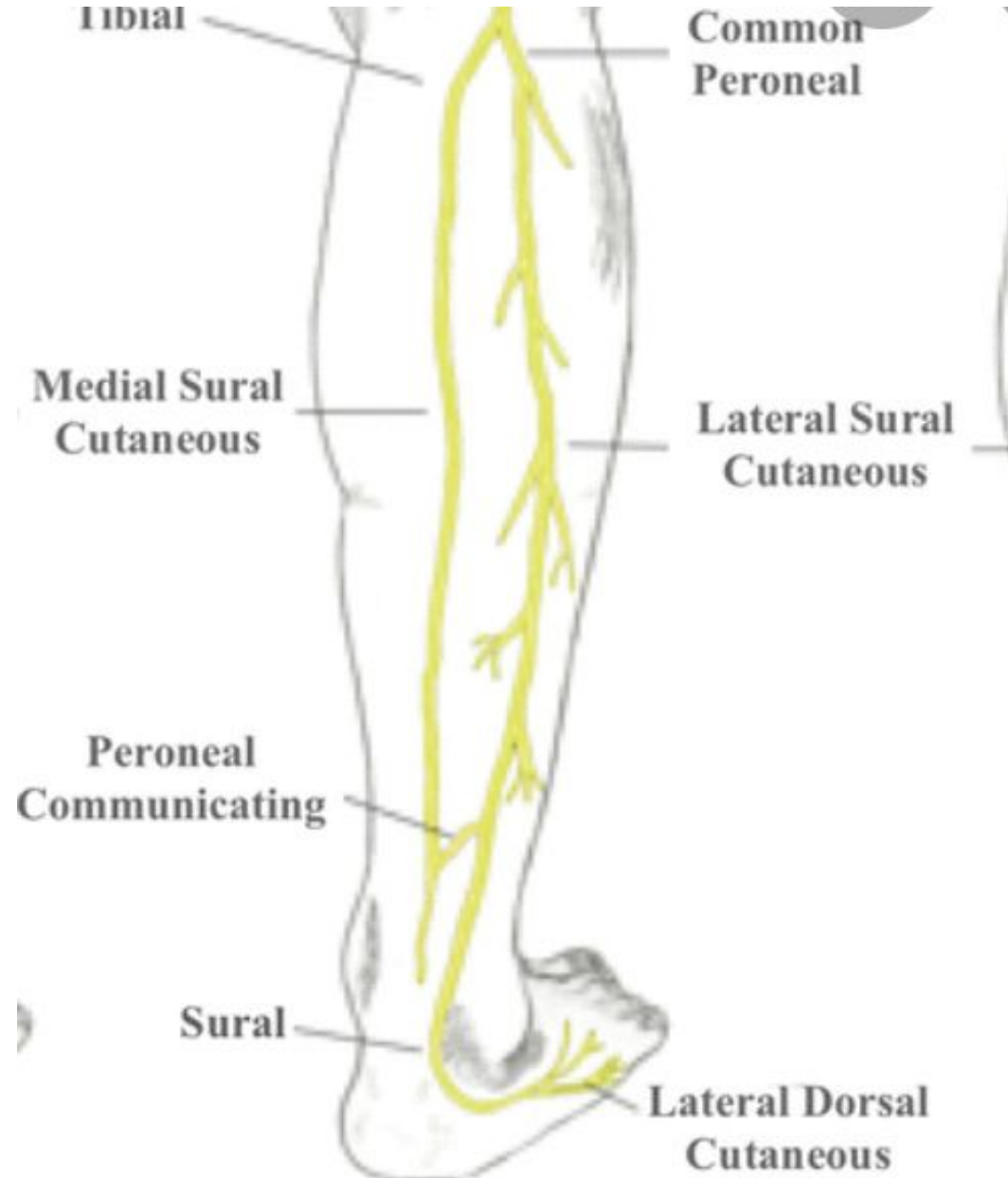
- **OPTIMAL:** CHAOTIC STRUCTURE, HEALTHLY STATE OF MOVEMENT. FORCES ARE ABSORBED AND DISPERSED CORRECTLY.
- **RIGID:** STIFF, REPETITIVE, UNCHANGING IE. LIMPLING.
- **GREATER THAN OPTIMAL:** UNPREDICTABLE. AN INJURED ANKLE THAT PROVIDES INCORRECT PROPRIOCEPTIVE INFO AFTER TRAUMA.

CUTANEOUS NERVES

-cutaneous nerves supply sensory information to the skin and along submit a proprioceptive branch to the joints that they traverse.

-research by Staubesand and Schleip suggest that cutaneous nerves provide sensory innervation to the fascia

-in addition the research suggests that many of the sensory receptors are in fact nociceptors.



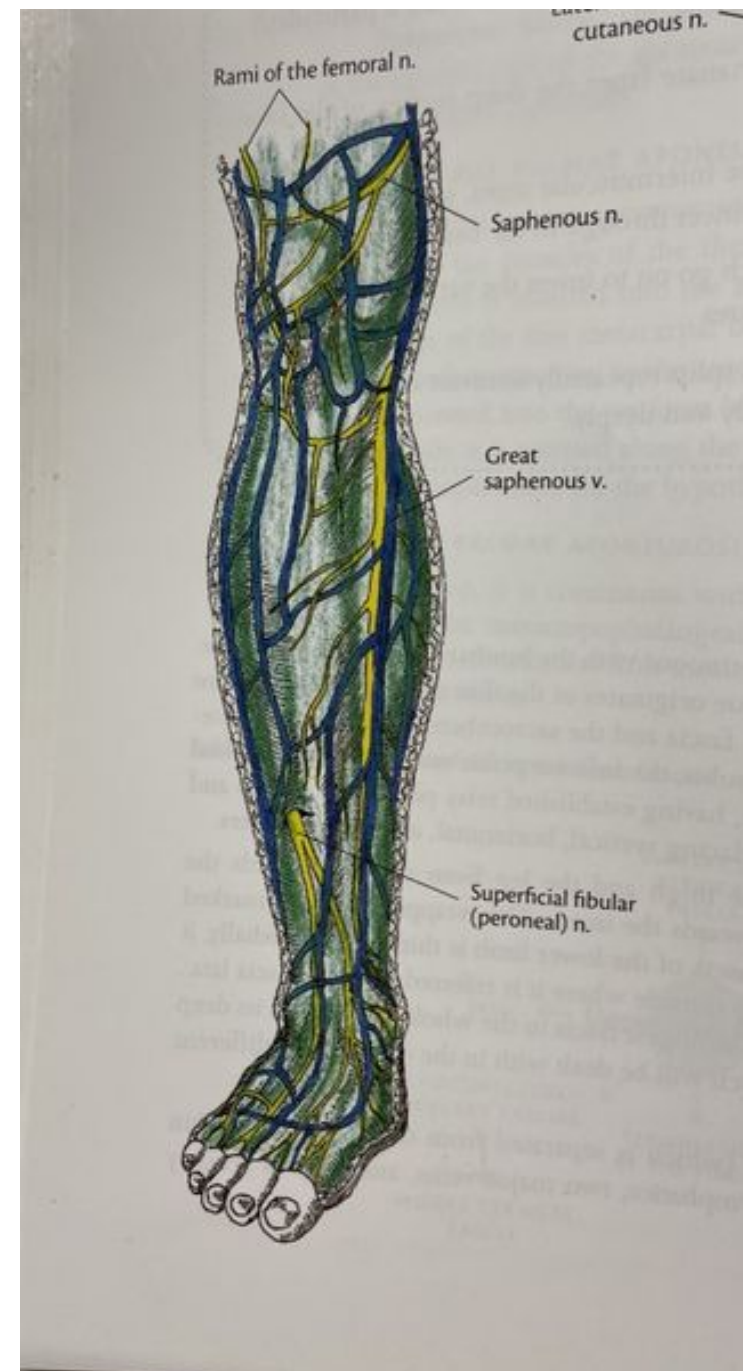
WHAT IS FASCIA?

- A THIN COVERING WHICH ENCASES ALL MUSCLE, NERVES, VESSELS AND SOFT TISSUE.
- ONE CONTINUOUS COVERING
- THINK OF A THIN CELLOPHANE WRAP FULL OF TINY BLOOD VESSELS AND NERVE ENDINGS
- BOOK RECOMMENDATION: THE FASCIAE BY SERGIO PAOLETTI



LOWER LEG FASCIA

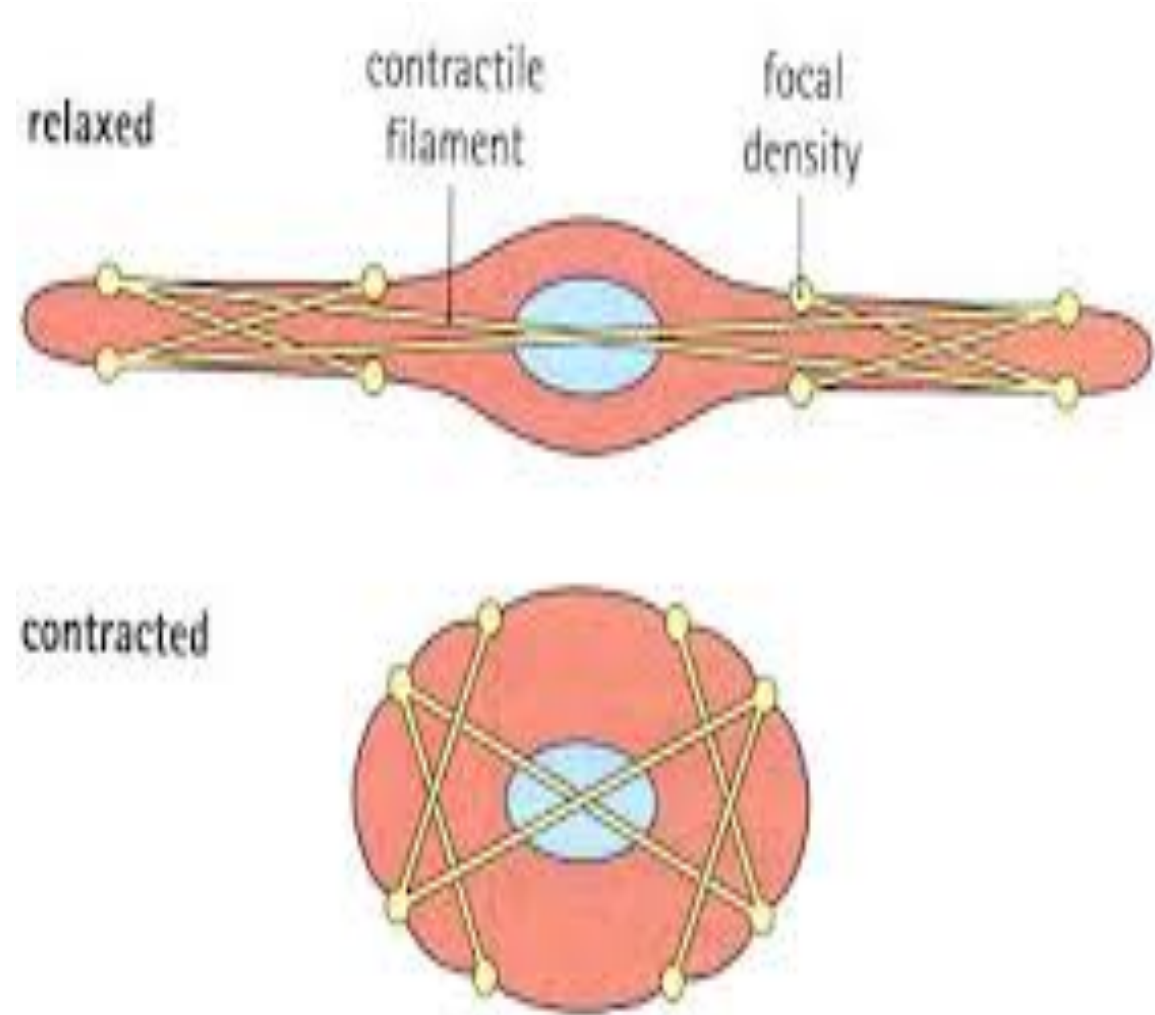
- STAUBESAND PUBLISHED ELECTRON PHOTOMICROGRAPH STUDIES OF THE LOWER LEG FASCIA AND THEY FOUND *SMOOTH MUSCLE CELLS*, INTRAFASCIAL NERVE FIBERS AND SENSORY NERVE ENDINGS NEVER PREVIOUSLY REPORTED.



SMOOTH MUSCLE

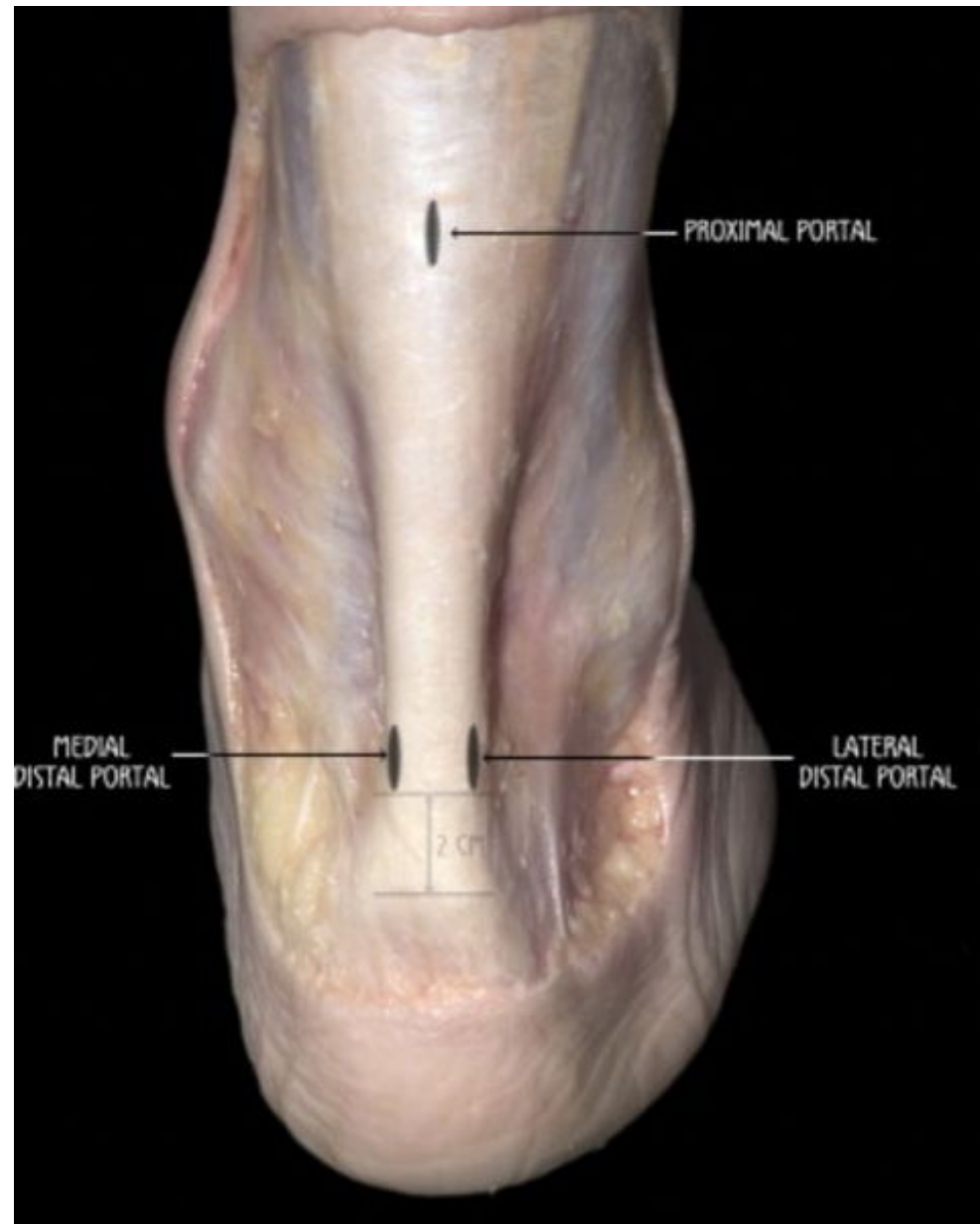
-THIS IS BIG NEWS IN THE WORLD OF FASCIA BECAUSE SMOOTH MUSCLE IS INNERVATED BY THE AUTONOMIC NERVOUS SYSTEM (ANS)

-UNDER THE INFLUENCE OF THE ANS THE FASCIA ITSELF CAN ACTUALLY CONTRACT UPON CHANGE IN THE SYMPATHETIC NERVOUS SYSTEM.

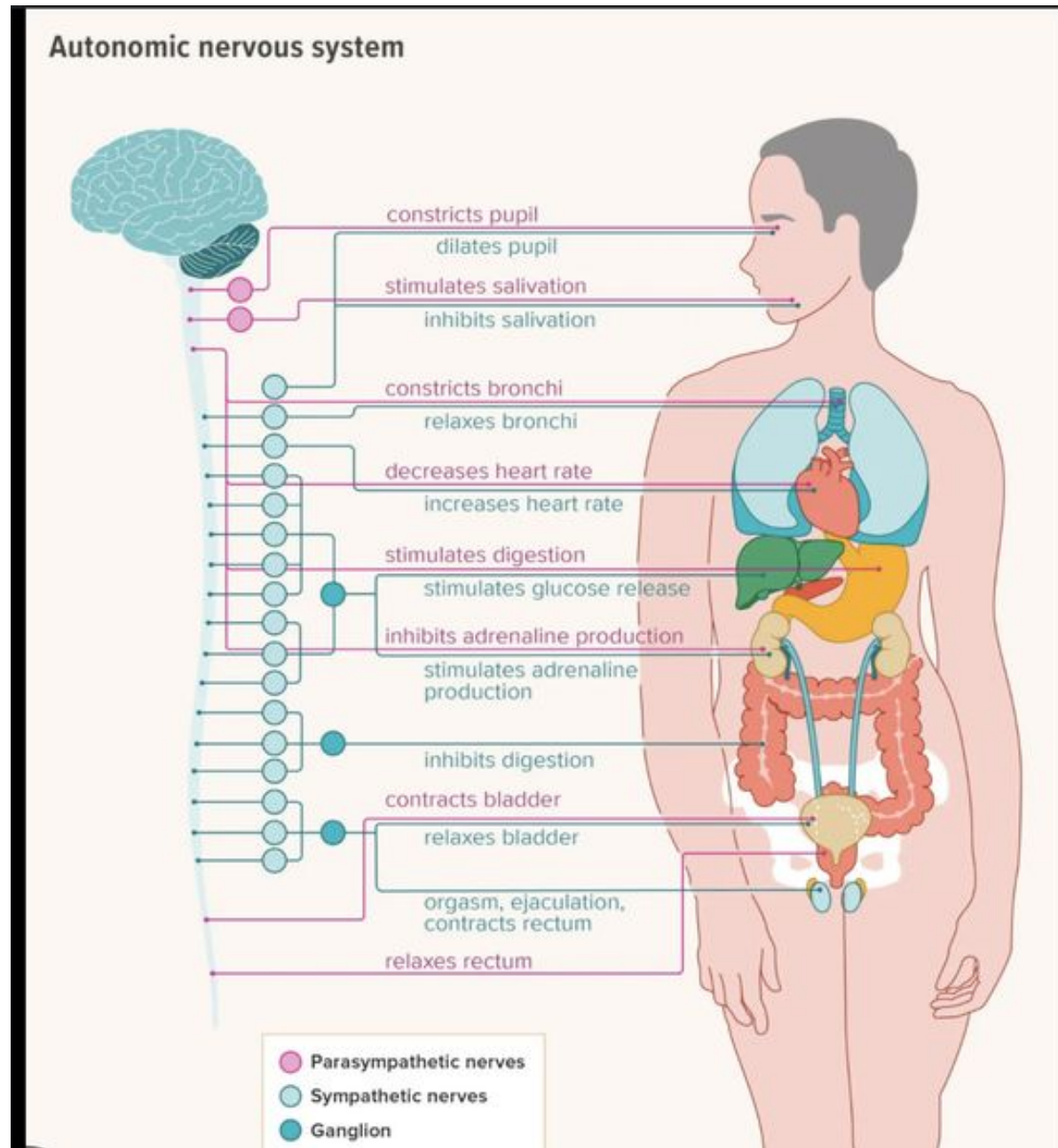


MYOFIBROBLASTS

- FASCIA IS CONTINUOUS FROM SUPERFICIAL TO DEEP
- THIS IS A SPECIALIZED CELL FOUND IN FASCIA WHICH IS A CROSS BETWEEN A *FIBROBLAST* AND *SMOOTH MUSCLE CELL*
- MYOFIBROBLASTS ARE FOUND EXTENSIVELY IN THE PLANTAR FASCIA ALONG WITH AUTONOMIC NERVES AND CAPILLARIES
- RESEARCH TELLS US THAT THE MYOFIBROBLASTS IN THE FASCIA CAN LITERALLY CHANGE SHAPE WITHIN MINUTES ONCE NOXIOUSLY STIMULATED
- CONTRACTION!



PNS/SNS



VIEWS OF THE PARATENDON

KAGER'S FAT PAD IN BETWEEN



PARATENDON TO PLANTAR FASCIA



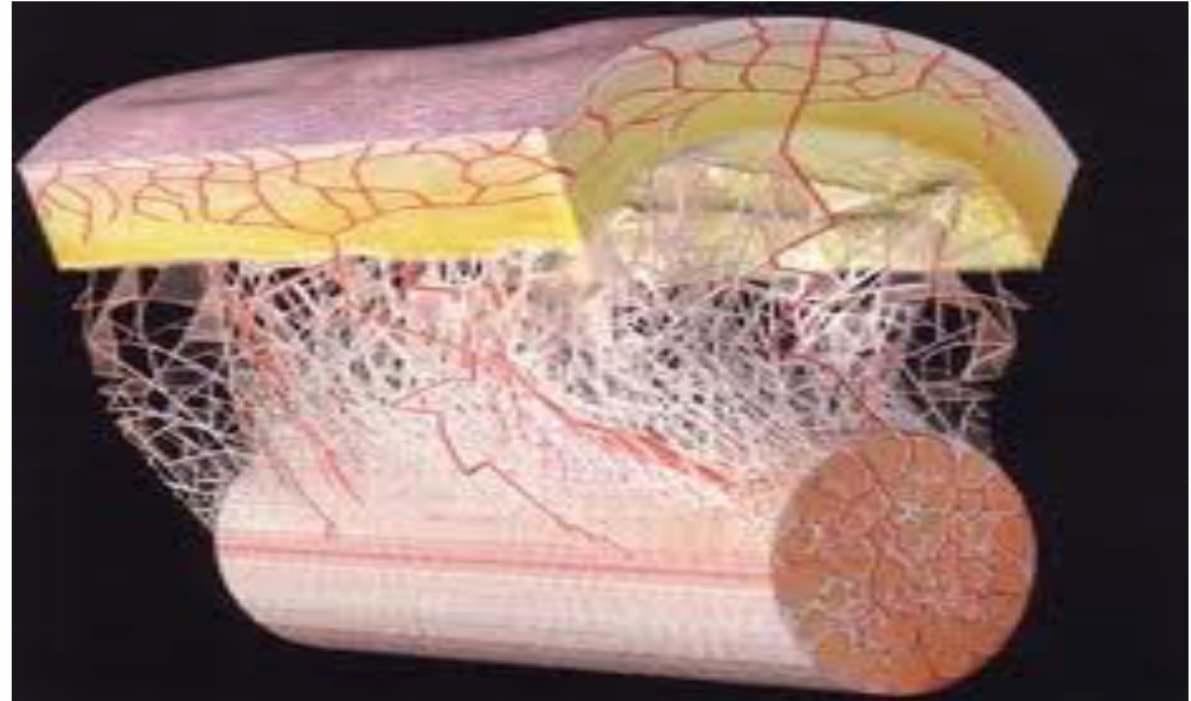
THE PARATENDON

- CONTINUOUS SLEEVE WHICH ENCASES THE ACHILLES TENDON AND THE STRUCTURES BEHIND THE TIBIA.
- IT HAS A FASCIAL ATTACHMENT TO THE PLANTAR FASCIA. MYOFIBROBLASTS WHICH CONTRACT IN SYMPTOMATIC “PLANTAR FASCIATIS” CAUSE LENGTH CHANGES IN THE PARATENDON
- FULL OF CAPILLARIES AND A NETWORK OF FREE NERVE ENDINGS AND PROPRIOCEPTORS.



PARATENDON: VASCULAR/NEURAL NETWORK

-THIS IS WHY NEEDLING ALONGSIDE
EACH BORDER USING AN IN-LINE
TECHNIQUE IS NECESSARY TO
NEUROMODULATE THE PERFUSION
OF BLOOD FLOW AND MODULATION
OF PROPRIOCEPTION AND
NOCICEPTION



Reply to All

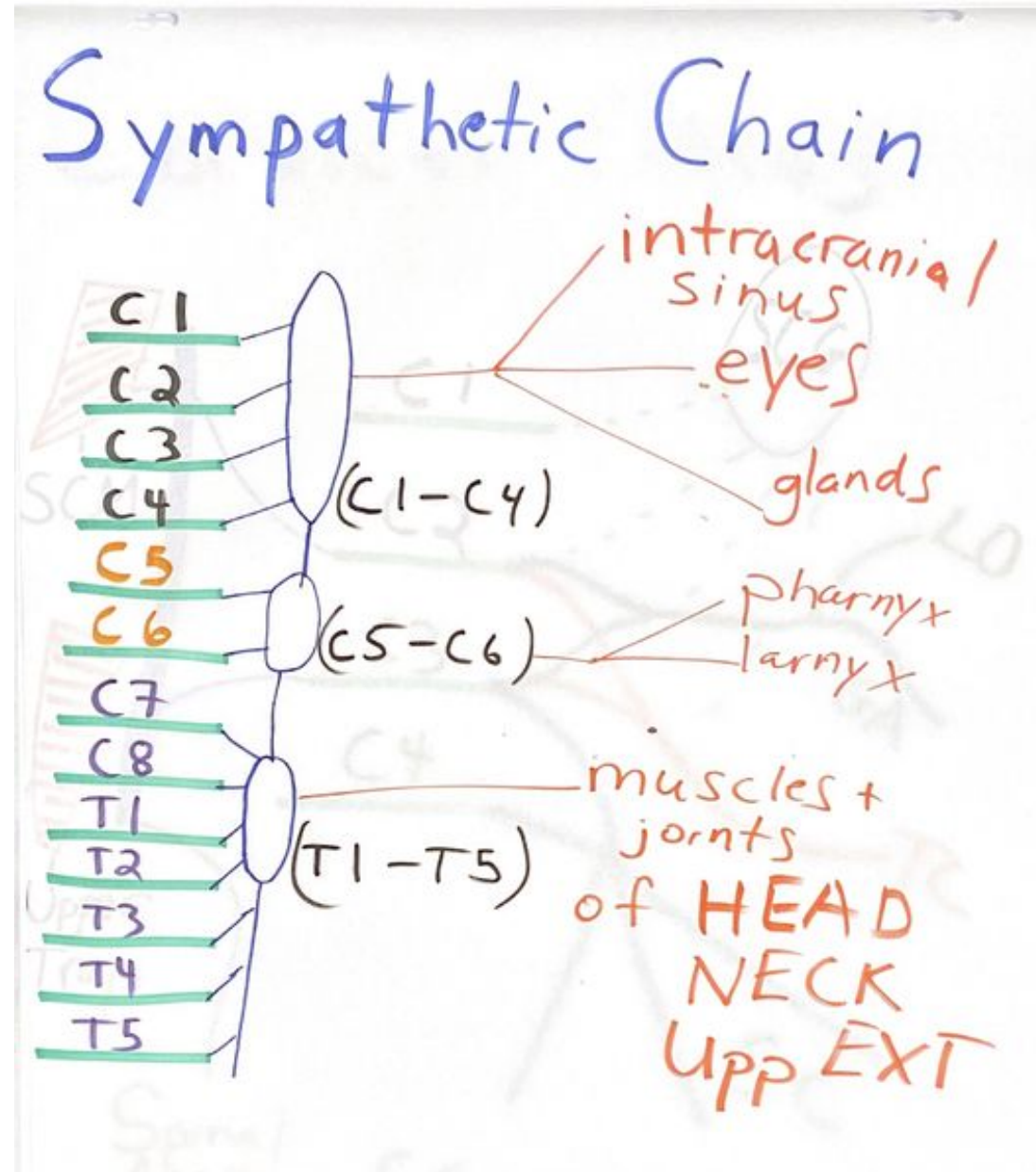


CLINICAL MEANING: ANS & THE FASCIA

- THE FASCIA IS THE ANS ACCORDING TO ROBERT SCHLEIP.
- NON-CHRONIC SYSTEMIC PATIENTS WITH A COMBINATION HISTORY OF: SPORTS INJURIES, PHYSICAL TRAUMA, MULTIPLE SURGERIES, REPETITIVE STRAINS OCCUPATIONS OR POSITIONS, LONG-STANDING MSK CONDITIONS THAT GO UNMANAGED – HAVE A HIGHER SYMPATHETIC TONE.
- IN THESE PATIENTS, NOXIOUS STIMULI CAN ALTER “MECHANOSENSATION” WHICH MODIFIES MUSCLE CO-ORDINATION AND JOINT STABILITY – MOTOR INHIBITION.
- THESE PATIENTS NEED MORE ANS CARE – PERFUSION PROTOCOL

SYMPATHETICS IN MECHANICAL INJURY

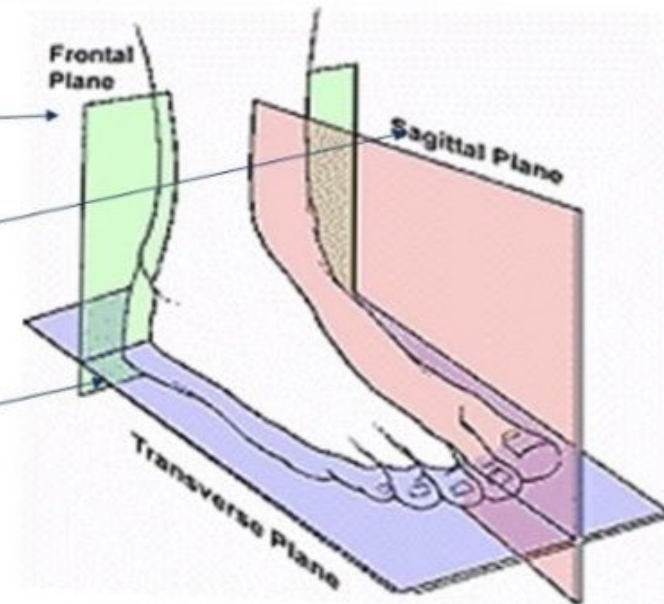
- WHIPLASH AFFECTING C5-C7 CAN CAUSE INHIBITION IN THE SERRATUS ANTERIOR
- GETTING HIT INTO THE BOARDS IN HOCKEY CAN CAUSE INHIBITION OF THE SERRATUS ANTERIOR WHICH CAUSES SPINAL SENSITIZATION AT C5-C7,
- BOTH OF THE ABOVE SCENARIOS INFLUENCE THE SYMPATHETIC NERVOUS SYSTEM. IN THIS CASE T1-T5 (INFERIOR CERVICAL SYMP CHAIN) PROVIDE BLOODFLOW TO MUSCLES AND JOINTS OF HEAD, NECK, AND UPPER EXT.
- SSS CAN BE INFLUENCED BY INSUFFICIENT PERFUSION CONTRIBUTION BY THE AUTONOMIC NERVOUS SYSTEM
- FASCIAL INNERVATED BY ANS (SMOOTH MUSCLE)



ACCESSORY MOVEMENTS = JOINT GLIDE

Planes as related to the foot

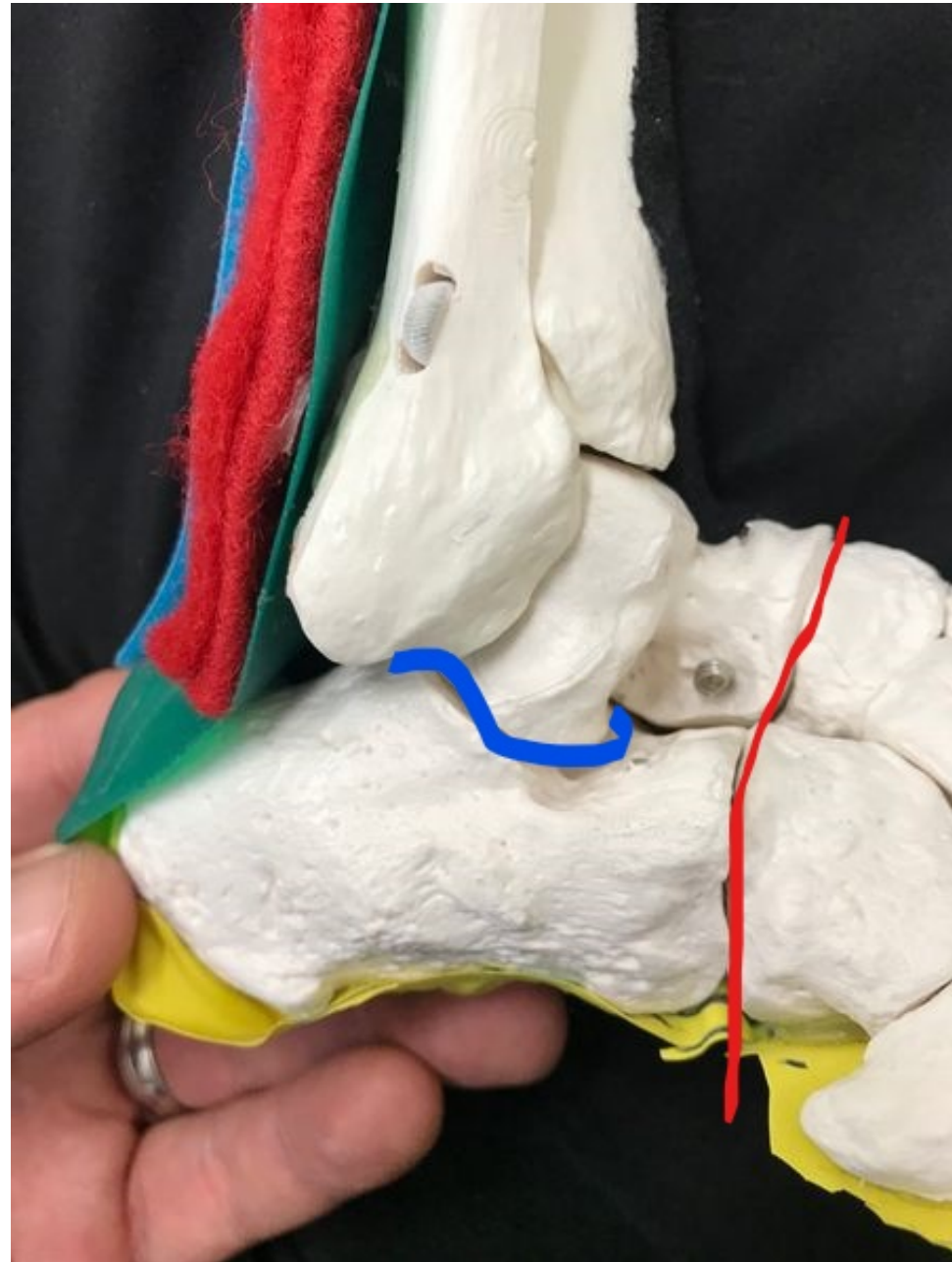
- Frontal
- Sagittal
- Transverse



GAIT: LOCKED & UNLOCKED

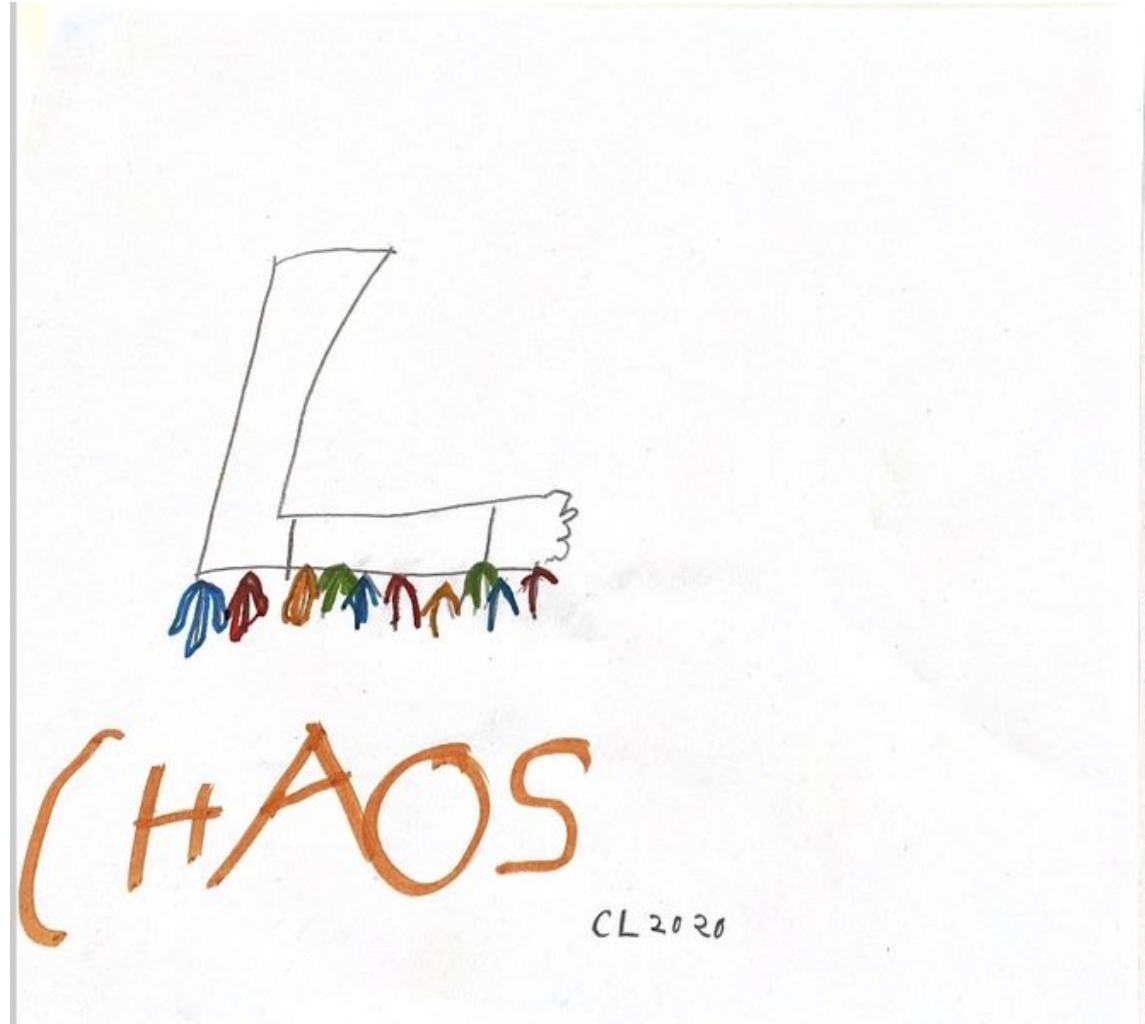
HEEL STRIKE: THE FOOT/ANKLE EVERT WHICH *LOCK* THE SUBTALAR JOINT (BLUE) AND *UNLOCKS* THE MIDFOOT (RED)

SWING PHASE: AS THE FOOT AND ANKLE SWING THROUGH THE AIR THE SUBTALAR JOINT (BLUE) INVERTS WHICH *UNLOCKS* THE JOINT AND CAUSES THE MIDFOOT (RED) TO *LOCK*



NORMAL GAIT

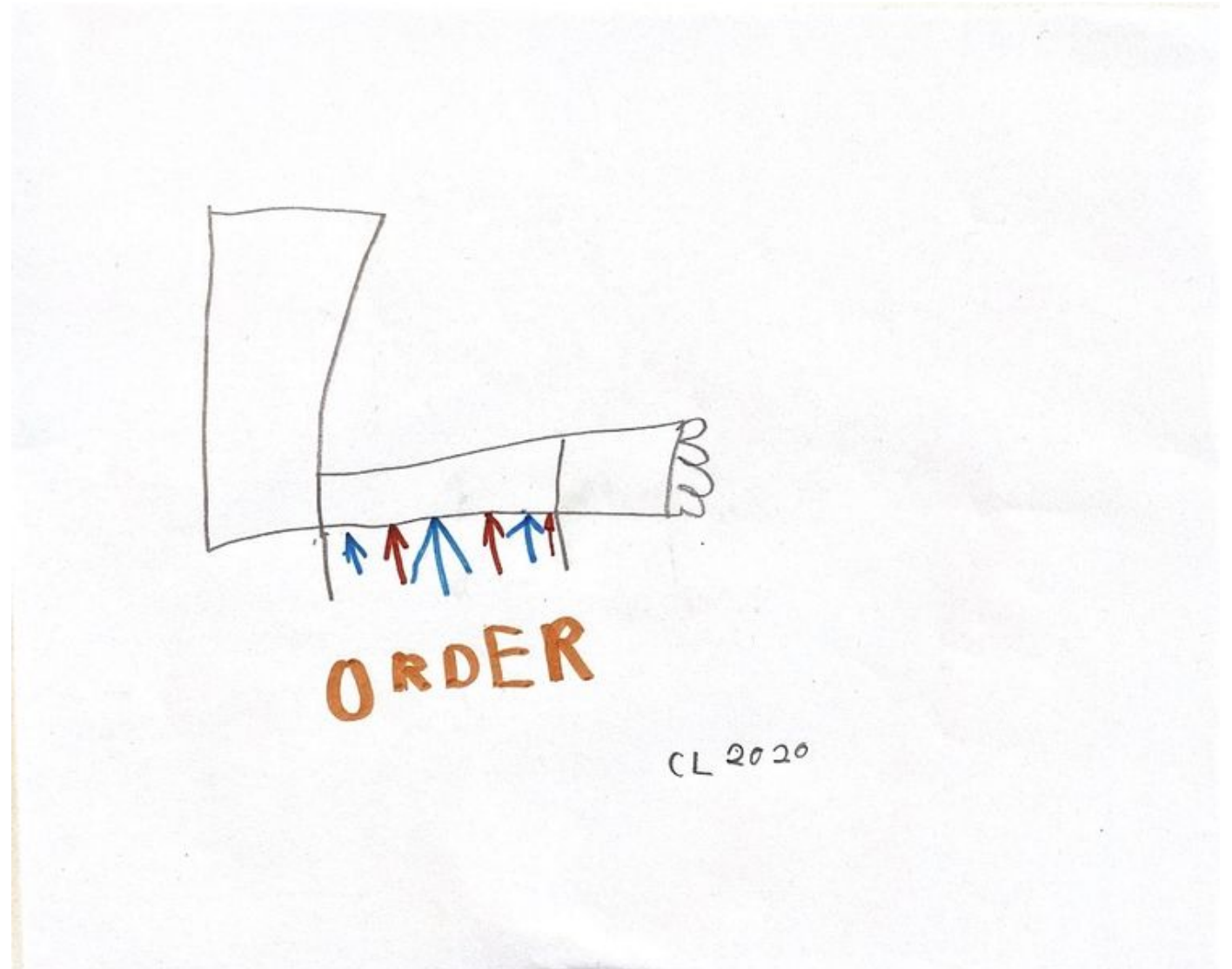
- EACH STEP IS A UNIQUE EVENT IN TIME
- FORCES ARE ABSORBED DIFFERENTLY EACH AND EVERYTIME
- THIS PRESERVES JOINTS AND SURROUNDING SOFT TISSUE
- NORMAL GAIT IS CHAOTIC



COMPENSATORY GAIT

- LIMPING IS PREDICTABLE
- EACH STEP FOLLOWS THE SAME PATTERN
- OVER TIME THE JOINTS AND SURROUNDING TISSUES ARE UNABLE TO ADAPT TO THE REPEATED FORCES AND THE TISSUE BEGINS TO CHANGE.

IE. CONTRACTION OF FASCIA,
REDUCTION OF BLOOD FLOW,
ADDITION OF NEUROGENIC
INFLAMMATION – ALL RESTRICT
ACCESSORY MOVEMENTS



ASSESSMENT GUIDE OF ACCESSORY GLIDE

- FLEXION/EXTENSION & INVERSION/EVERSION
- FRONTAL PLAY
- TORSIONAL PLAY

MANUAL RELEASE TECHNIQUE PROTOCOL

- ***GOAL: RESTORE ACCESSORY MOVEMENT.*** ALWAYS DO 20-40 PASSES. 20-30 PASSES IN THE MIDFOOT AND 30-40 IN THE ANKLE.
- SELECT A PRESS HAND AND KEEP IN PLACE WITH YOUR INDEX AND MIDDLE FINGER WITH YOUR THUMB STABILIZING THE PLANTAR SURFACE.
- YOUR OTHER HAND PROVIDES FLEXION AND ROTATIONAL INPUTS WHICH INCREASE TENSION AT PRESS HAND LOCATION
- BEGIN BETWEEN 2/3 CUNEFORMS, THEN PROCEED TO NAVICULAR/CUBOID, FOLLOWED BY NAVICULAR-TALAR-CUBO-CALCANEUS, ENDING WITH 3RD CUNEFORM/CUBOID ARTICULATION.

LOCALS: MENTORSHIP COMMUNITY

Dr.
**Anthony
Lombardi**



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