

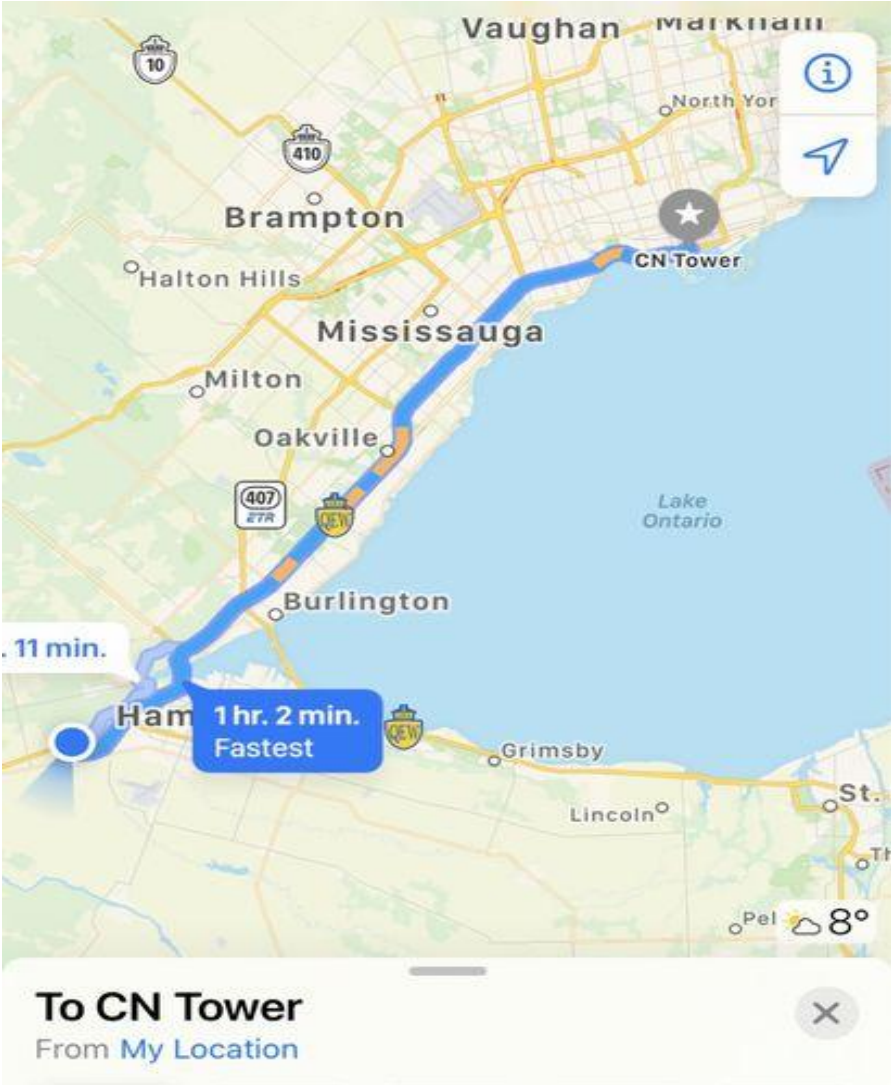
103 MILES:
LIVE
ASSESSMENT/TREATMENT OF
AN ULTRAMARATHONER

MAY 15. 2021

BY: DR. ANTHONY J. LOMBARDI

WHAT WAS RYAN'S RUN FOR HOPE?

THE ROUTE

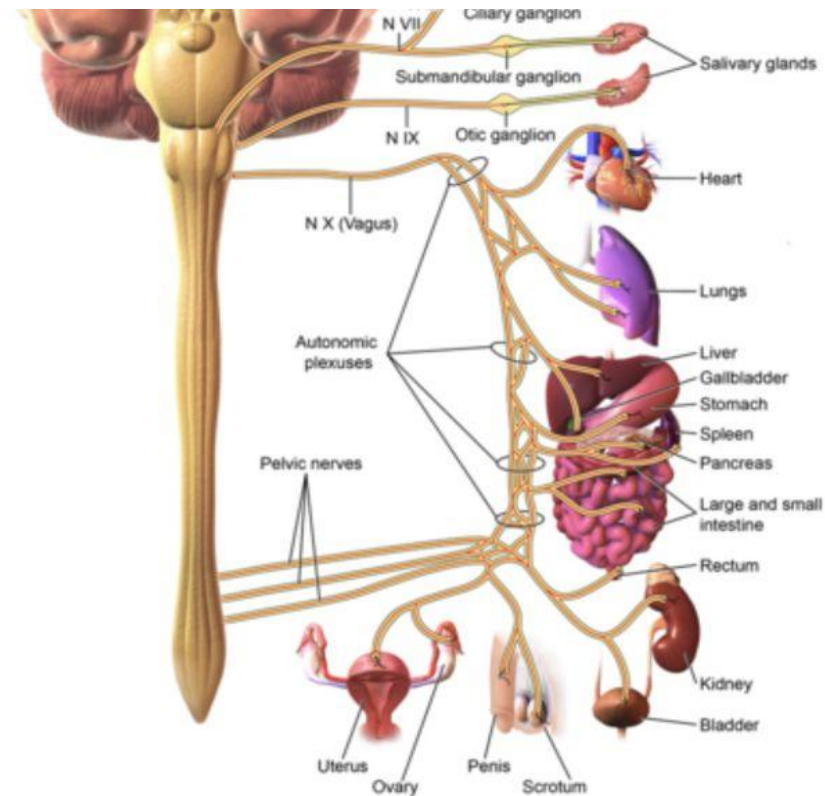


TREATMENT GOALS IN STRENUOUS EVENTS

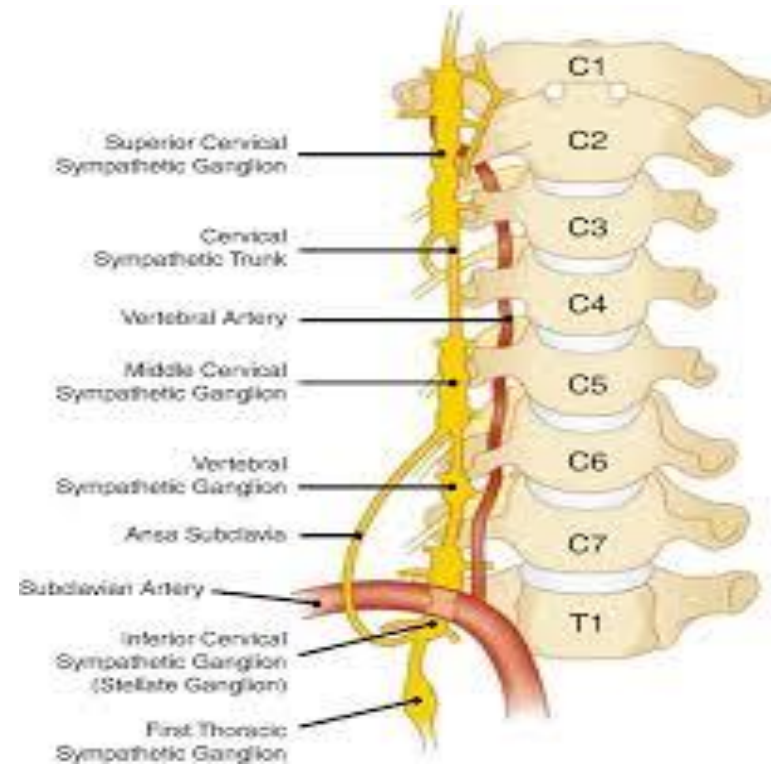
1. NEUROMODULATE THE CNS
2. ADDRESS AREAS OF COMPLAINT
3. ADDRESS FOUNDATIONAL GIRDLES WHERE TIME PERMITS
4. PERFORM SOFT TISSUE

NEUROMODULATING THE ANS

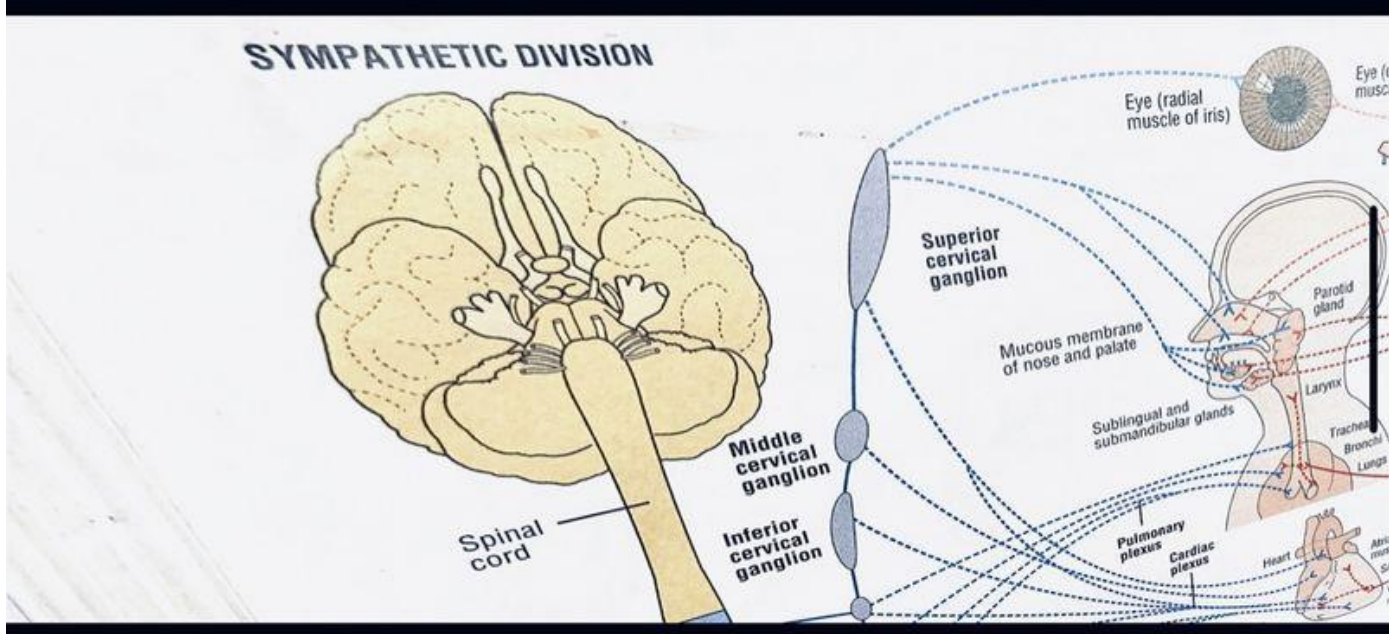
CRANIAL NERVE X: VAGUS NERVE



CERVICAL SYMPATHETIC CHAIN



SUPERIOR/INFERIOR SYMPATHETIC GANGLION



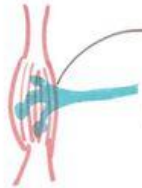
HOW DO WE NEUROMODULATE?

- AURICULAR
- DISTAL POINTS
- PAIN MODULATION
- PERFUSION TECHNIQUES

WHAT IS MOTOR INHIBITION?

WHAT IS MOTOR INHIBITION?

MOTOR INHIBITION (MI)



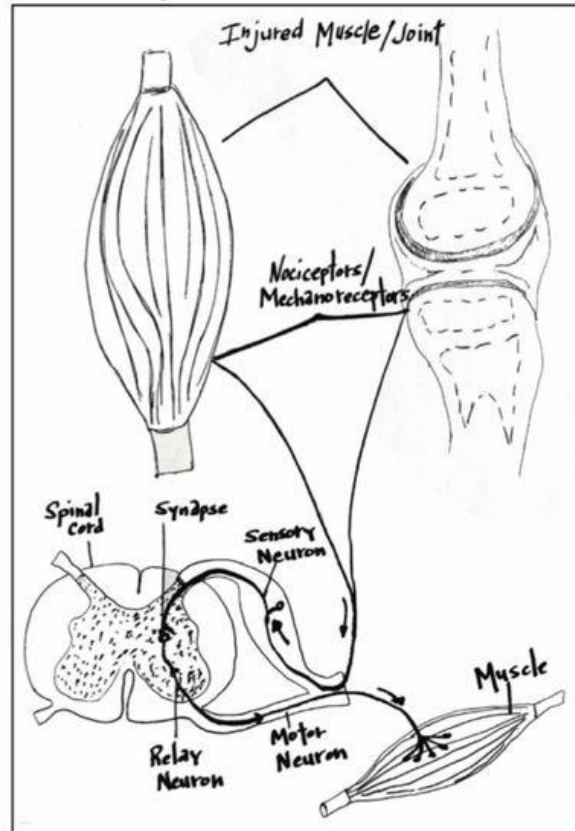
dysfunction of neuromuscular jnt (NMJ)

Causes of MI (noxious stimulus)

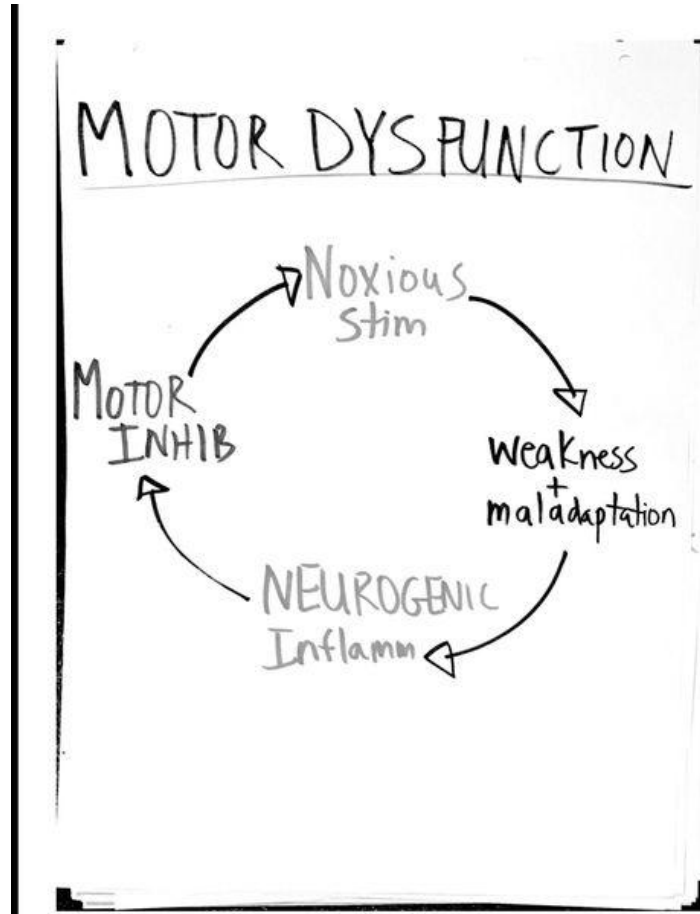
- PAIN
- Trauma (RSI)
- Δ 's joint (arthritis)

NOXIOUS STIMULI DECREASE MOTOR OUTPUT

can tell us this is possible.



MOTOR DYSFUNCTION: THE SPIRALING CYCLE



ASSESSMENT DURING THE EVENT

ASSESSMENT CHECKLIST

1. ASSESS CNS: IS PATIENT COLD, SHIVERING, OVERLY WARM, ALERT ETC
2. ASSESS AREAS OF COMPLAINT: LOCALITY, PROJECTED EFFECT ON RUNNING IN TERMS OF ADAPTATION AND MOTOR INHIBITION.
3. ASSESS FOUNDATIONAL GIRDLES: PELVIC/SCAPULAR IE EXSTORE
4. USE CLINICAL TRENDS AS YOUR GUIDE: RADAR IN THE NIGHT

CLINICAL TRENDS & TENDENCIES

CLINICAL TRENDS

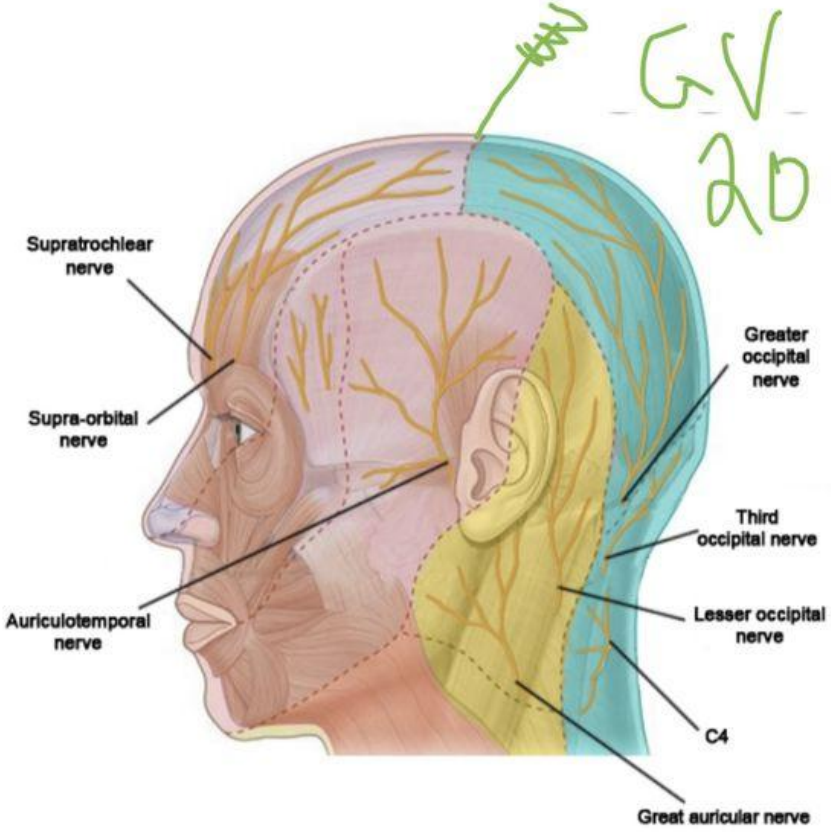
- ankle: TFL, gluteus medius
- Knee: TFL, gluteus medius
- hip: obliques, gluteus minimus
- Low back: obliques, gluteus med/max
- Neck: serratus anterior,
clavicle
- Shoulder/UE: serratus anterior,
clavicle

ON-SITE EVENT TREATMENT

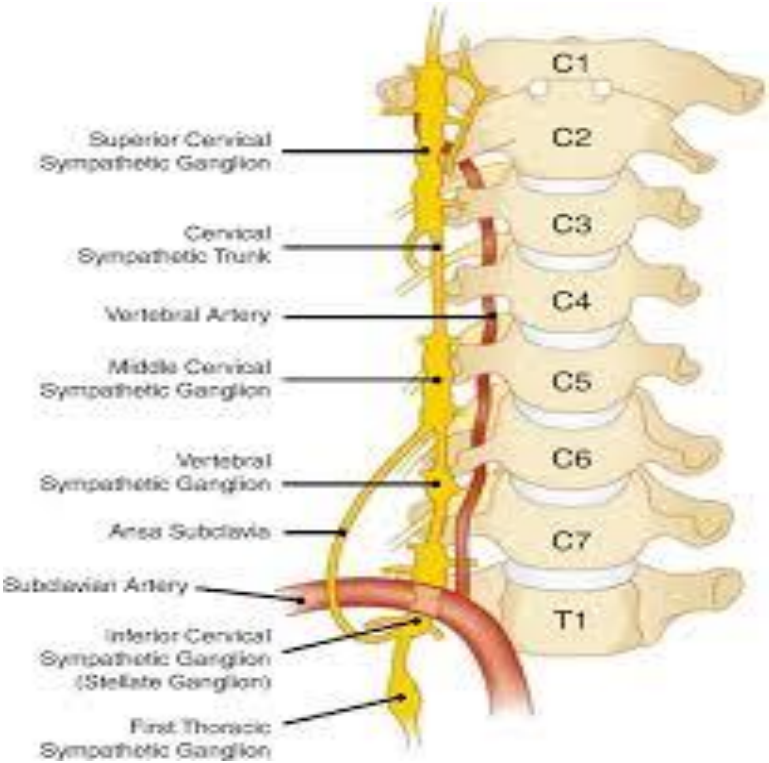
NEUROMODULATION OF ANS

1. THE HAPPY PROTOCOL
2. STIMULATION OF CERVICAL SYMPATHETIC CHAIN
3. CONTROLLED PAIN MODULATION (CPM)
4. PERFUSION TREATMENT

THE HAPPY PROTOCOL



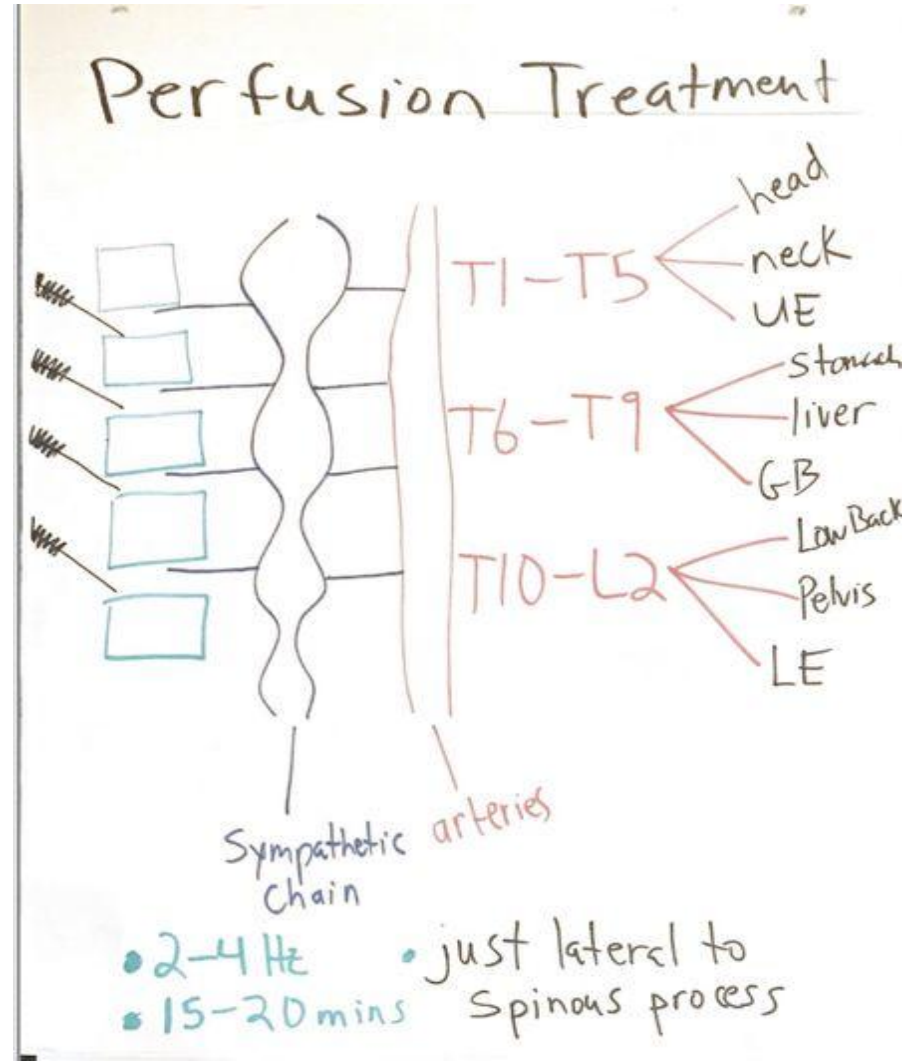
CERVICAL SYMPATHETIC CHAIN STIMULATION



CONTROLLED PAIN MODULATION

- 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 REDUCTION 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.

PERFUSION TREATMENT: BLOOD RESTORED



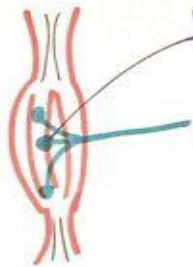
MECHANICAL TREATMENT

VARIOUS NEEDLE TREATMENT TECHNIQUES

1. MOTOR POINT STIMULATION
2. IN-LINE AND 2NT
3. HIGH FREQUENCY STIMULATION

INTRODUCTION TO MOTOR POINTS

Intro to Motor Points

WHAT:  neuromuscular junction

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

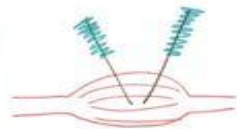
WHEN:

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

IN-LINE & 2 NEEDLE TECHNIQUES

EA Neuromodulation Techniques (restructure)

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



2 NT

- 2-4 Hz
- 10-12 min



In-Line

BONE, JOINT, LIGAMENT: HIGH FREQUENCY

High Freq Electroacupuncture

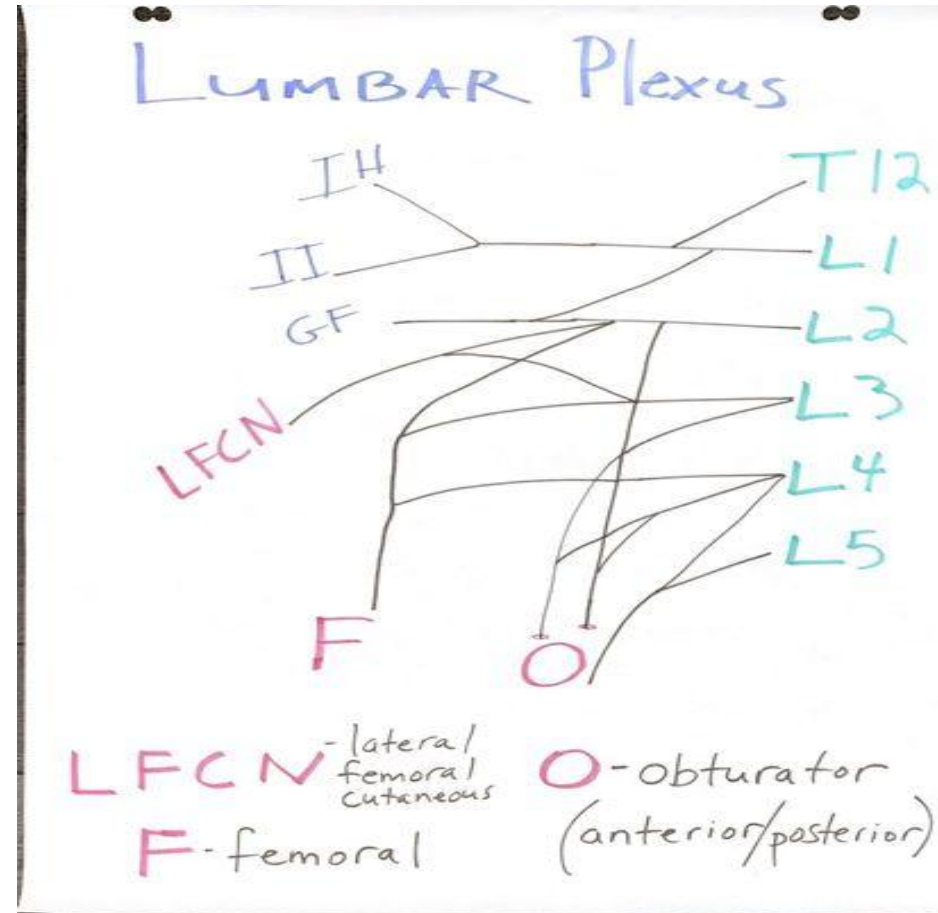
WHEN: sclerotomal pain
(dull, ill-defined, deep)

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

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

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

PSOAS PECKING: LUMBAR PLEXUS NEUROMODULATION



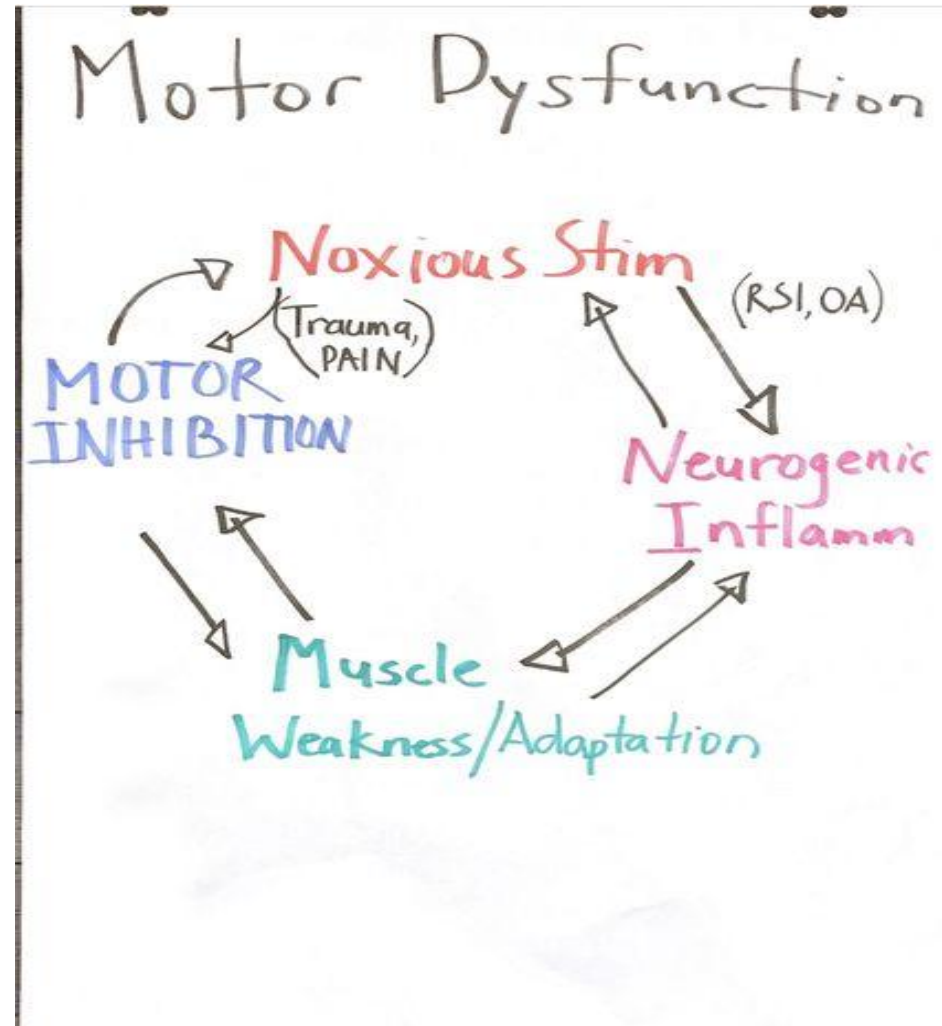
SOFT TISSUE TECHNIQUES

SOFT TISSUE RELEASE POSITIONS

1. SIDELAYING
2. PRONE
3. SUPINE

SOFT TISSUE ROLE IN MOTOR DYSFUNCTION

- ALWAYS DONE AFTER NEEDLES
- RENOVATE AFTER NEUROMODULATE
- TREATING MSK INJURY WITHOUT SOFT TISSUE WORK IS LIKE COOKING WITH A FLAME
- YOUR DISHES ARE LIMITED
- DO NOT LIMIT YOUR CLINICAL POTENTIAL – LEARN AND USE SOFT TISSUE PROTOCOLS



Keys To Manual Work

- ↑ ROM + creates space to improve hemo/fluid dynamics
- releases cutaneous/peripheral Nerves
- addresses
 - muscle
 - joint
 - nerves
- all together better than acupuncture

Bernoulli's Principle

Fluid travelling thru a narrowed opening:

↑ speed of flow

AS

pressureⁱⁿ system ↓

BODY POSITION

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

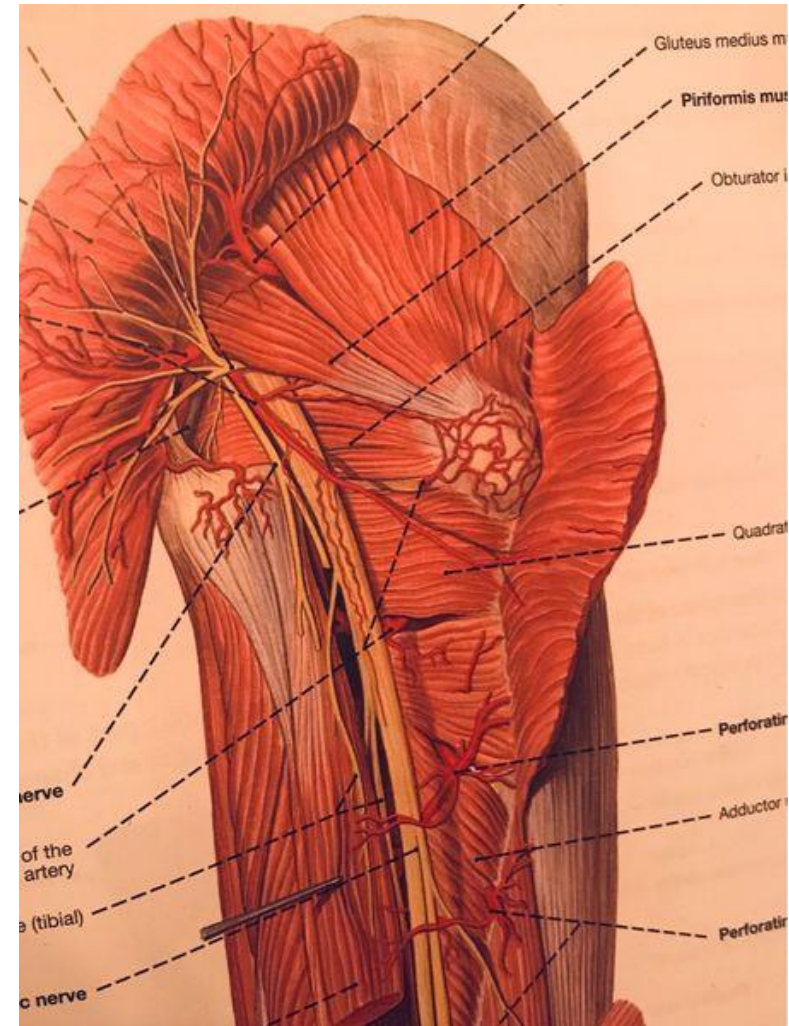
5. Fluidity

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

- STANCE
- HAND LOCATION
- DIGITAL TENSION
- NUMBER OF PASSES
- FLUIDITY

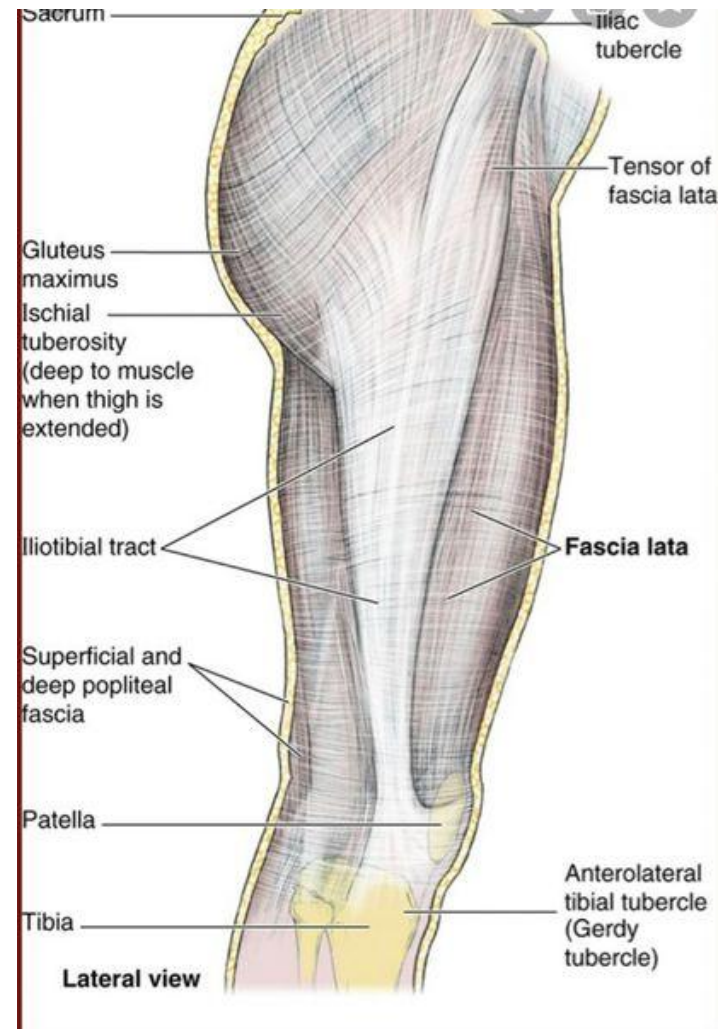
SIDE-LAYING LOWBACK RELEASE

- AFFECTED SIDE UP (LEFT SIDE UP = RIGHT CONTACT HAND)
- FOLLOW ALONG IN THE VIDEO
- LEG EXTENDED AT KNEE
- POSITION YOURSELF BEHIND THE THIGH WITH YOUR RIGHT HAND ON THE KNEE AND LEFT 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 VICEVERSA
- FOLLOW ALONG IN THE VIDEO
- 30-35 PASSES
- WILL DRAMATICALLY INCREASE ROM OF HIP AND SLR.



LOW BACK/HIP RELEASE

3-5 passes each side, add arm assist

PSOAS/QL INTERFACE

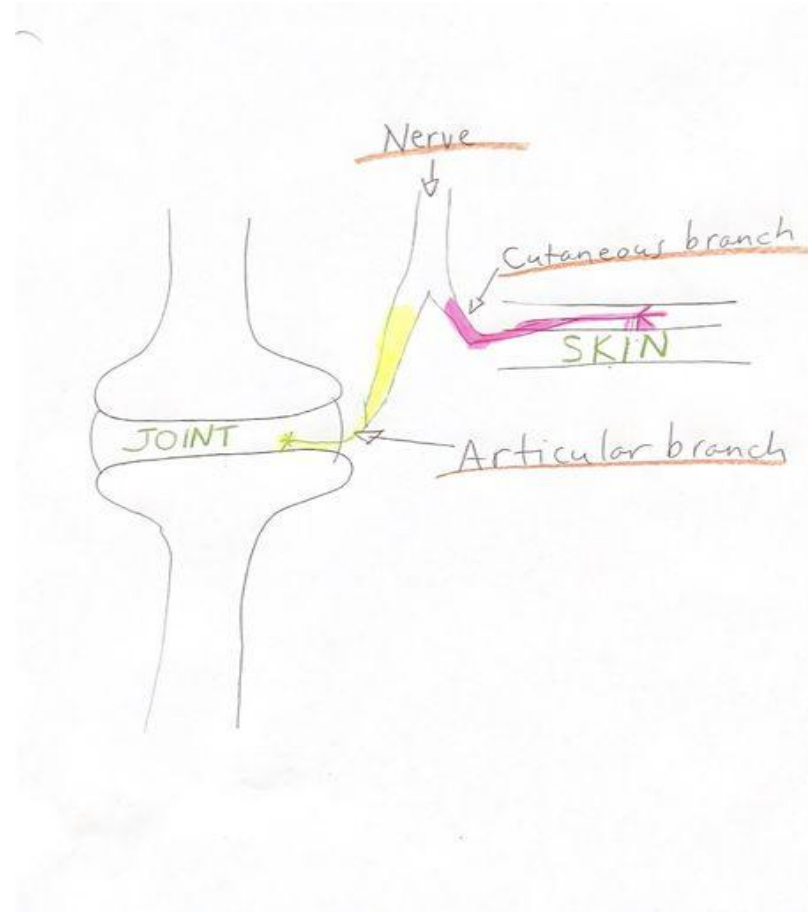


QL FROM POSTERIOR



TAPING TECHNIQUES

UNDERSTANDING PROPRIOCEPTION



TYPE OF ATHLETIC TAPE I USE



WHAT ARE PROPERTIES OF ATHLETIC TAPE?

- RIGID
- IMMOBILE
- OPAQUE
- WATER RESISTANT
- **RELIABLE**

***WHAT* DOES ATHLETIC TAPING DO?**

1. Stabilize or support an injury
2. Relieve pain by de-loading vulnerable or painful structures
3. Facilitate normal movement, muscle action, or postural patterns.

THE GAMEPLAN

THE TREATMENTS...

- EACH TREATMENT WAS TO BE ABOUT 15 MINUTES LONG
- TREATMENTS WERE TO TAKE PLACE AT MILE 24, 49, 72, 83, AND 91.
- THE PACECAR HAD ALL OF OUR TREATMENT EQUIPMENT
- DR. MINO OR I WOULD MEET THEM AT THE AGREED LOCATION.
TIMES WERE 2PM, 7PM, MIDNIGHT, 3 AM, 6 AM.

CHARTING OUT WHAT YOU CAN DO

Mile 24/91

Face-Up

- IO/TA - 2NT
- ③ Upper Troop
- Inline = adduct
- axils
- peroneal
- NM of CNS

6 mins

Soft Tissue

- QL/psoas
- ③ VMO
- ③ STL/Hams
- adjust ft-t/L

4-5 mins

NM of CNS

24 - Happy Protocol

91 - CSC

Mile 72

Symp Side Down

- NM of CNS (Happy Prot)
- 2NT = EO MP (split)
- IO MP (split)
- In-line (downside)
- sc. Quad, Hams, calf
- glutes
- High Frog = interspart by SA
- over LSC aton

6 mins

Soft Tissue

- Upside = hip
- glut
- low back

Pointer Plus

- Upside Servo to Ant

TURN

- Do SA stim w PP
- as other side soft tissue
- - h.p., glut, low back

6m

Finish psoas/QL adjust > 2min

Mile 83

Face Down

High Frog

- T10+L2 interspart
- T1 rest interspart

NM of CNS (Happy Prot)

Inline/2NT

- IO/TA/QL (200)
- Glut max (2NT)
- Hams frog (inline)
- Gastro/peroneal (inline)

7 mins

Soft Tissue

- glut/STL
- QL

4-5 mins

WHAT ACTUALLY HAPPENED...

BARRIERS TO GAMEPLAN

- BELOW 0 DEGREES CELSIUS TEMPERATURES
- BULKING CLOTHING
- TREATMENT LOCATION WAS IN AN SUV BECAUSE OF COLD WIND ALONG LAKESHORE
- TAPE NEEDED TO BE PRE-WARMED
- RYAN STIFFENING UP IF TREATMENT TOO LONG.

SIGNIFICANT POINTS IN THE RACE

- AT 40 KM: HE LOOKED LIKE HE JUST READ THE MORNING PAPER
- 50-80 KM: HE WAS EXPERIENCING LEFT LATERAL KNEE PAIN ALONG THE IT-BAND.
- 126KM: HE WAS RUNNING ON ONE LEG. IE A CIRCUMDUCTION GAIT
- 128 KM – 168 KM: RYAN SAYS THE “TREATMENT CLICKED” AND HE WAS FLYING AGAIN.

POST-TREATMENT SERVICES

RECOVERY

- TREATMENT ONE: 24 HOURS AFTER
- MULTIPLE STIMULATION UNITS TO NON-NOXIOUSLY STIMULATE RUNNING MUSCLES.
- OBLIQUES, ABDOMINALS, QUADRICEPS, LATISSIMUS DORSI
- NORMALIZE THE AUTONOMIC SYSTEM WITH HAPPY PROTOCOL
- TREATMENTS 2 AND 3 WERE VARIATIONS OF THIS.
- AMAZINGLY HE RETURNED TO WORK AND I HAVE NOT SEEN HIM REGULARLY SINCE.
- OUTSTANDING RECOVERY SEEING THAT HE EXPOSED HIS BODY TO THIS GRUELING EVENT.