



How to Understand Pain and How to Treat IT

Hal S Blatman, MD, FAO APT, ABOIM, DAAPM, ABIHM

Past Chair, Integrative Medicine Consortium

Past President, American Holistic Medical Association

Affiliated Faculty, Bastyr University, Seattle

Author: Winners' Guide to Pain Relief

Medical Director: Blatman Health and Wellness Center

Holistic Comprehensive Care

Wellness and Rehabilitation

10653 Techwoods Circle, Suite 101

Cincinnati, OH 45242

Manhattan, Seattle

www.BlatmanHealthandWellness.com

DrB@BlatmanHealthAndWellness.com



***What Really Causes Pain?
And
What Needs to Happen for it to
GO AWAY!***

***For the Most Part...
It does not come from nerve, disc, spine, joint,
arthritis, or even inflammation as we were taught
to understand it.***



So our Diagnostic tools of MRI and X-ray Do Not Show the Injuries that Cause Chronic and even Acute Pain

- *So how do we find them?*
- *By touch, and we were not taught how to touch.*
- *What do we need to feel?*
- *We need to be able to feel the texture of fascia... more injured vs. less injured.*
- *Let's explore:
How Our Bodies are Put Together—
How we Accumulate a Lifetime of Injuries— And what it takes to heal.*





Objectives

- Identify and diagnose myofascial pain
- To do this .. Apply new knowledge about the anatomy of fascia
- Allow us to .. Utilize new strategies to manage care of acute and chronic pain patients
- Learn to .. Integrate non-pharmaceutical 'hands-on' options for pain patients
- Also - an appreciation for the concept.. everything eat, think, touch, and do, every drug, food, or remedy you prescribe... all affects your fascia.. and also your genetic structure



Are you thinking that Myofascial Pain is fairly benign and less important than other 'kinds' of pain?

- There is no significant symptom difference between neuropathic and nociceptive pain that 'type' can be determined.¹
- Myofascial pain is sympathetically mediated pain and neuropathic and physical at the same time.²
- Almost all pain is derived from a lifetime of injuries to fascia that holds us together and allows for motion.

1. Corey SM, Vizzard MA, Badger GJ, Langevin HM. Sensory innervation of the nonspecialized connective tissues in the low back of the rat. *Cells Tissues Organs*. 2011;194(6):521-30. doi: 10.1159/000323875. Epub 2011 Mar 18. PMID: 21411968; PMCID: PMC3238034.

2. Liptan G. The widespread myofascial pain of fibromyalgia is sympathetically maintained and immune mediated. *J Bodyw Mov Ther*. 2023 Jul;35:394-399. doi: 10.1016/j.jbmt.2023.04.081. Epub 2023 May 4. PMID: 37330799.



What if Your Finger Was Bleeding?

- Hold it up in the air and watch it for a while?
- Take some ibuprofen and see how it is in the morning?
- Race to the ER for emergency treatment?
- Or couldn't you put some pressure on it and stop the bleeding....



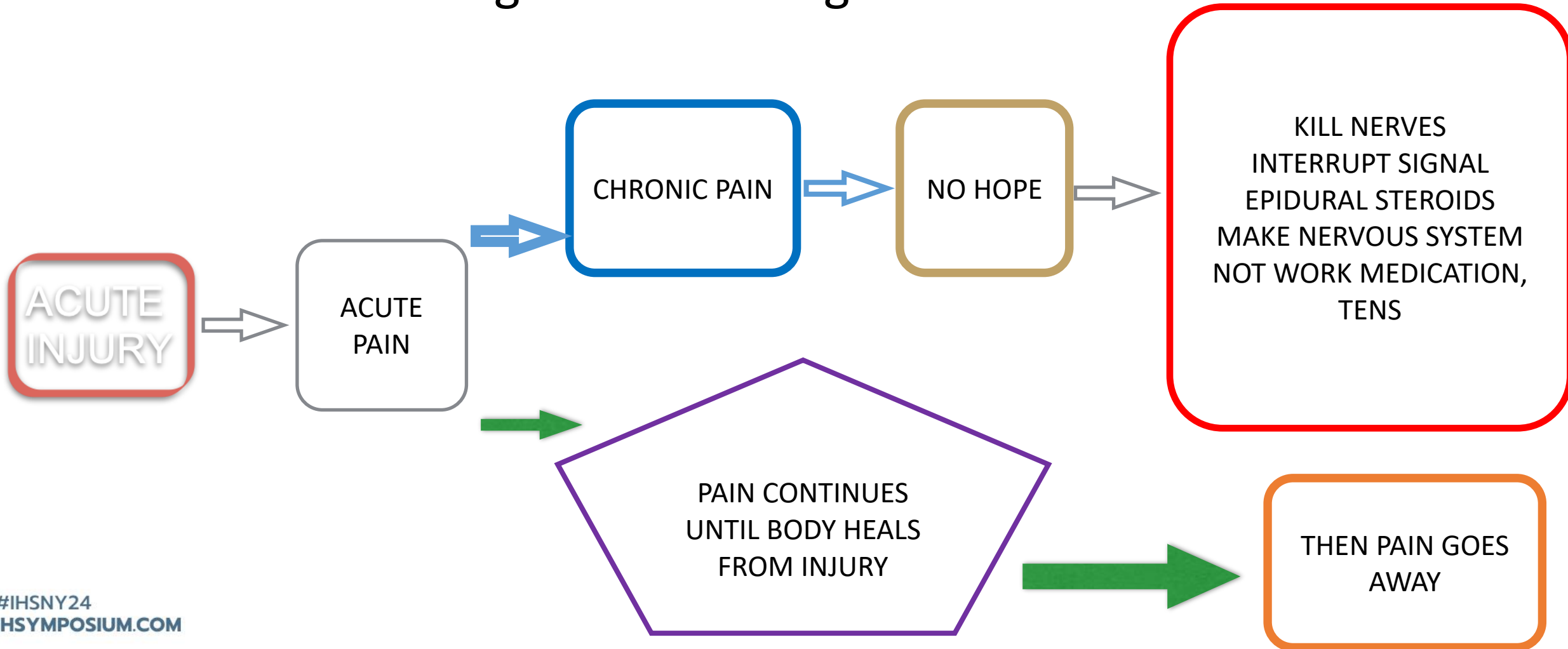
What if Your Knee Was Hurting?

- Moan and groan, lie down and rest with ice or heat?
- Take some Ibuprofen and see how it is in the morning?
- Run to the ER for emergency treatment?
- Or .. What if you could put some pressure on ** and stop the pain? Almost as quickly as stopping the bleeding..



What is Chronic Pain?

Two schools of thought across the globe...







Where Does Pain Come From?

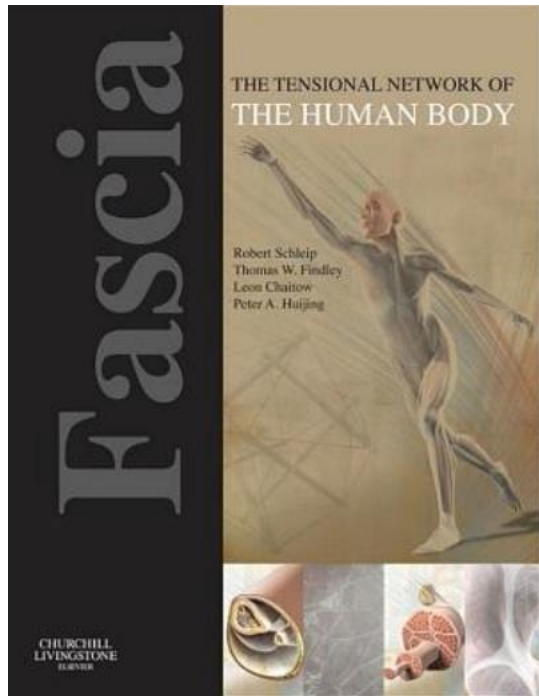
- Not nerve
- Not disc
- Not the spine
- Not inflammation as we were taught
- Not the joint
- Not arthritis
- Not old age

Blatman Five Rules for Understanding and Treating Pain

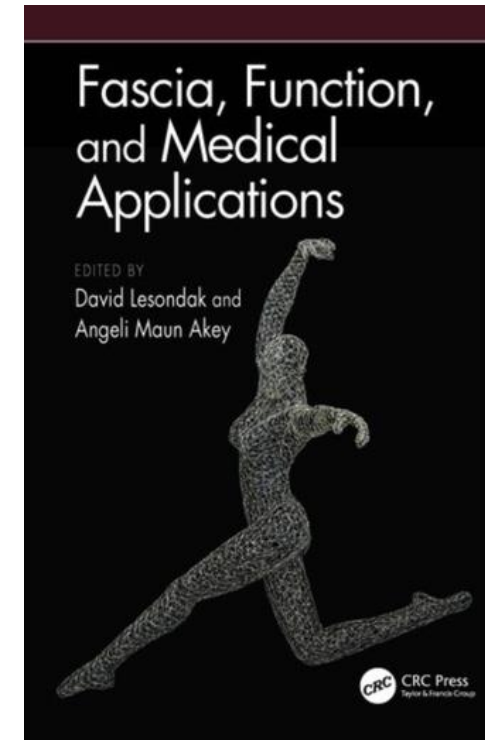
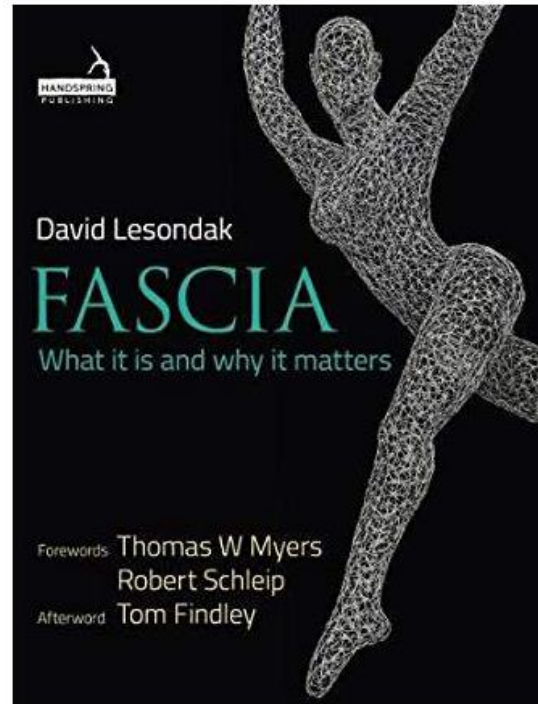
1. You can't believe pain comes from where you feel it .. your headache does not come from your head.. Left arm.. knee
2. You can't believe what you think the pain feels like.. sensation is not a diagnostic clue.. Brain cannot tell the difference between...
3. **THE ONLY THING YOU CAN BELIEVE IS** what you can touch and feel: that where you are specifically tender, mm x mm, is where fascia is kinked (TrP), or enthesis is injured (anchor)
4. The most tender areas in your body represent the fascia injuries and consequences of those injuries through your lifetime that generate most of the pain of which you are conscious
5. As soon as we unkink the fascia cords and strengthen (if needed) where fascia anchors and holds us together, the pain we thought we had will already be gone

These riffs in the fascia continuum cannot be seen on x-ray, not always seen on ultrasound, best diagnosed by palpation

Fascia Text Books



2012

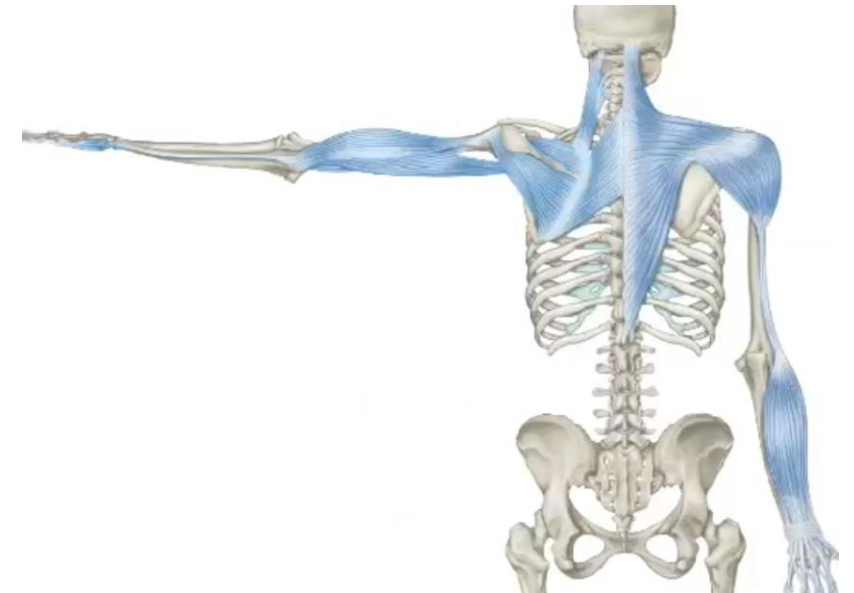
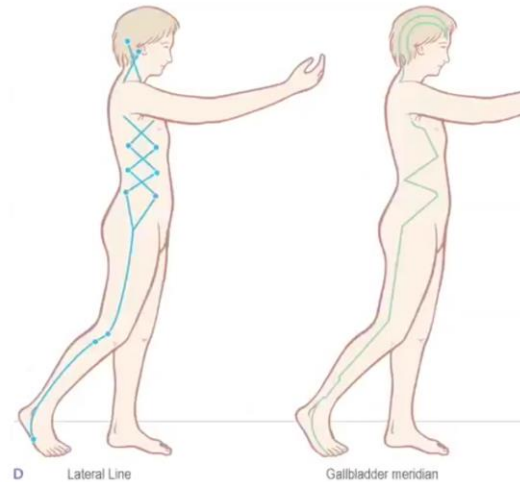
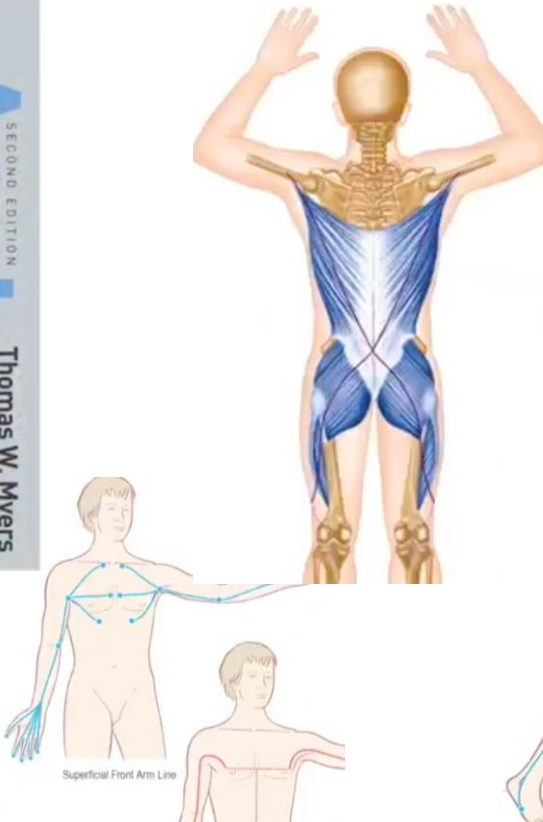
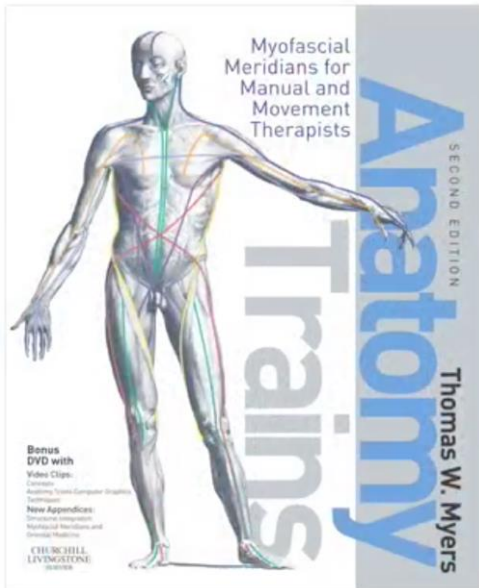


2021



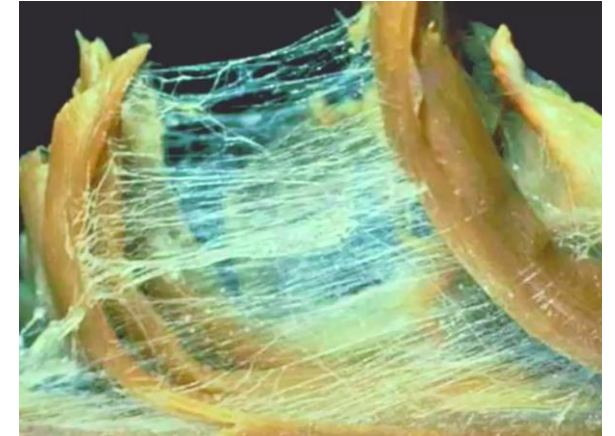
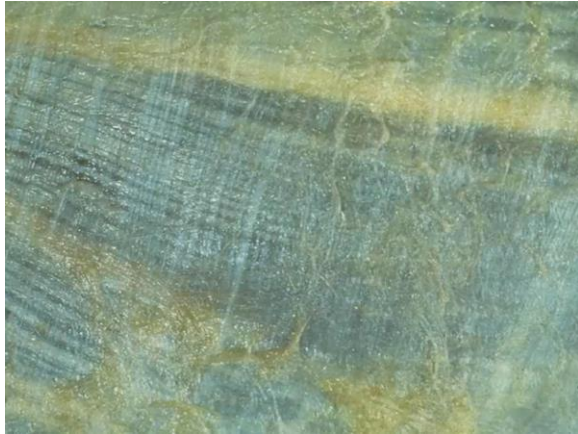
Fascia Anatomy – Anatomy Trains

Illustrations by Tom Myers

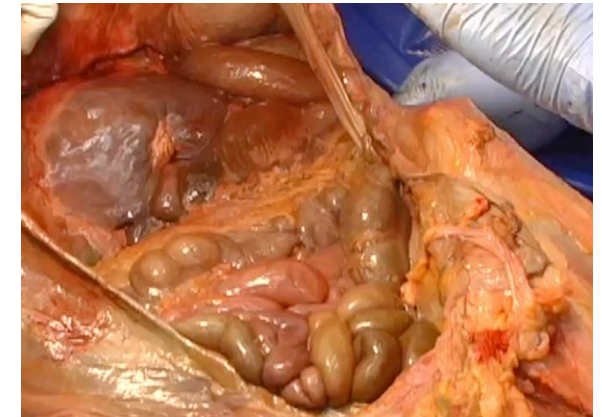
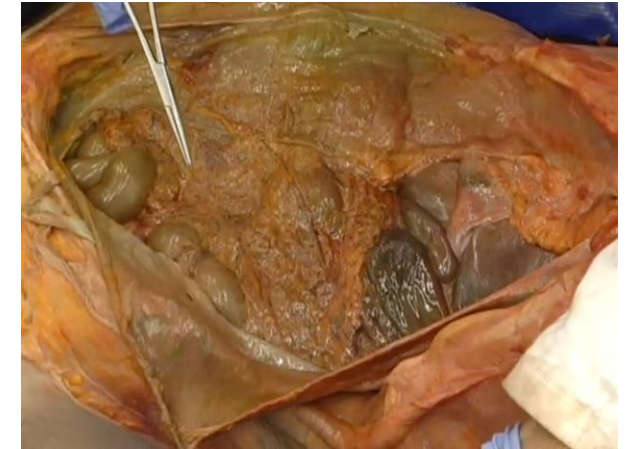
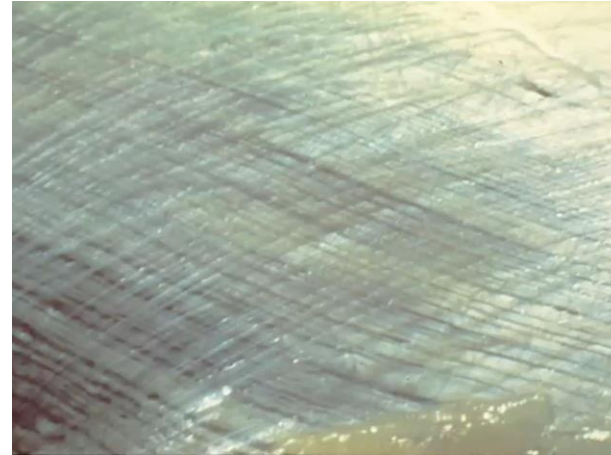


Forms of Fascia





Pictures courtesy of Tom Myers and David Lesondak



Pictures courtesy of Tom Myers and David Lesondak



Fascia

- Ubiquitous throughout the body
- Likely to be discarded during surgery
- “Cleaned off” in anatomy dissection to “see something more important”
- Most under appreciated tissue in body
- More important in more ways than classically taught

Schleip Findley Chaitow Huijing, *Fascia: The Tensional Network of the Human Body*, 1st Edition, 2012.
Van der Wal, *International Journal of Therapeutic Massage & Bodywork*, Vol 2, No 4, 9-23, 2009.



Also called: Connective Tissue

- With regard to personal injury:
 - Also termed: “soft” tissue
 - Historically difficult to assess damage
 - Historically difficult to prove damage
 - Historically not considered significant in contributing to disability
 - Many times this is most significant injury
 - Important for traumatically induced FMS (Fibromyalgia Syndrome)



Fascia

- Forms a biological container and connector for every organ and muscle
- Fascia ensheathes all bones (periosteum)
- Fascia is all one net, with no separation from head to toe
- Every cell responds and is hooked into the tensional environment of the fascia.

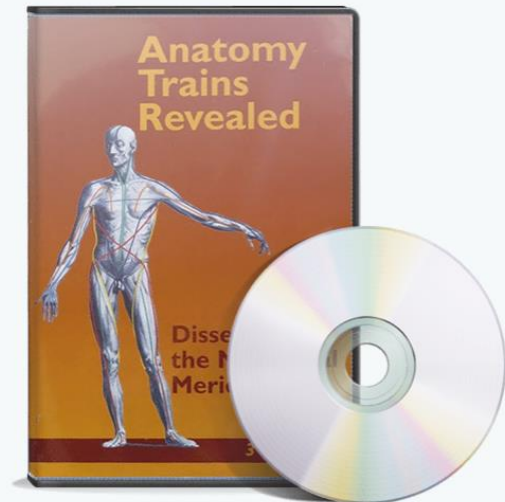
Ingber, J Bodyw Mov Ther. Jul; 12(3): 198–200, 2008.

Ingber, The architecture of life, Sci Am., Jan ;278(1):48-57, 1998.

Chaitow, L., Fascia 2007 Congress, Journal of Bodywork and Movement Therapies, 10, 249-50, 2006.

Tom Meyers Anatomy Trains

- www.anatomytrains.com
- Order and view videos of fascia anatomy



Anatomy Trains Revealed:
Dissecting the Myofascial
Meridians



\$49.95

Superficial Back Line of Human Fascia

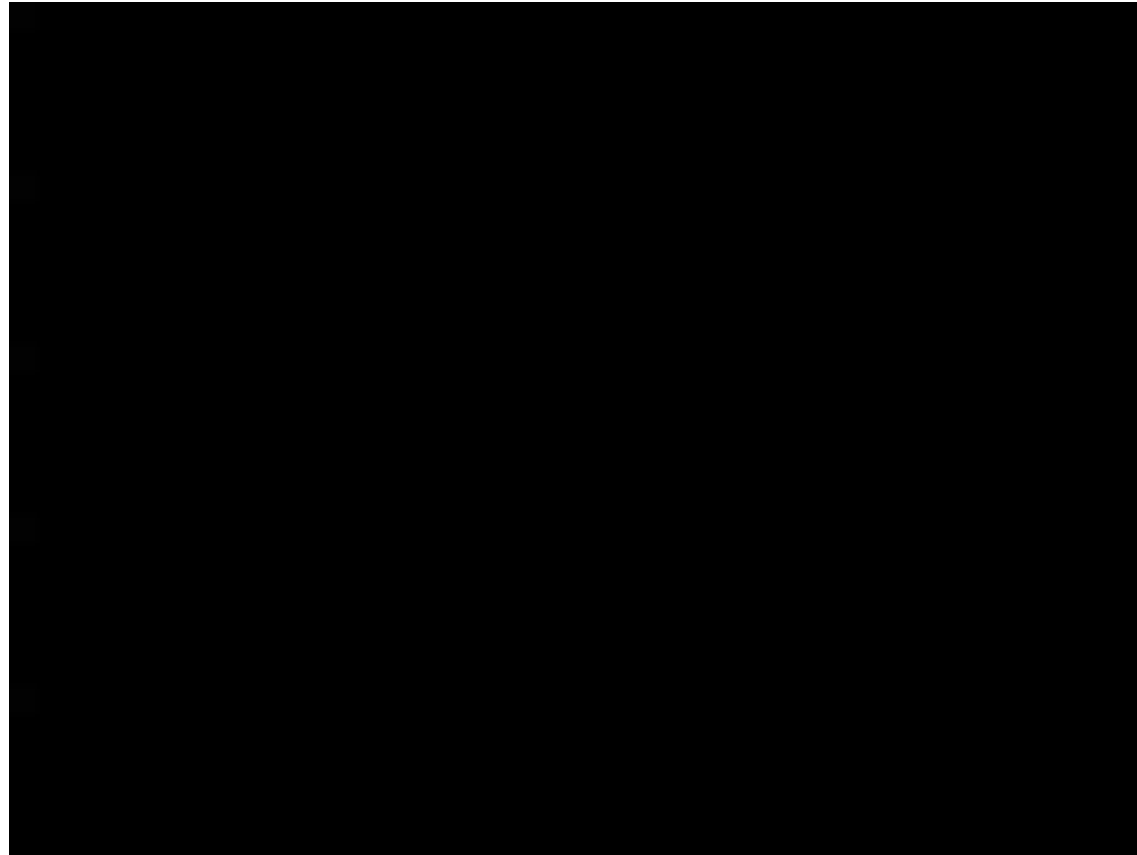
David Lesondak and Tom Meyers
Anatomy Trains

Let's See the
Superficial Back Line, Then Feel It

<https://www.youtube.com/watch?v=YcZNoKYxY4M>



Spiral Line -- Scoliosis



<https://www.anatomytrains.com/product/technique-series-spiral-line/>



Active Fascial Contractility

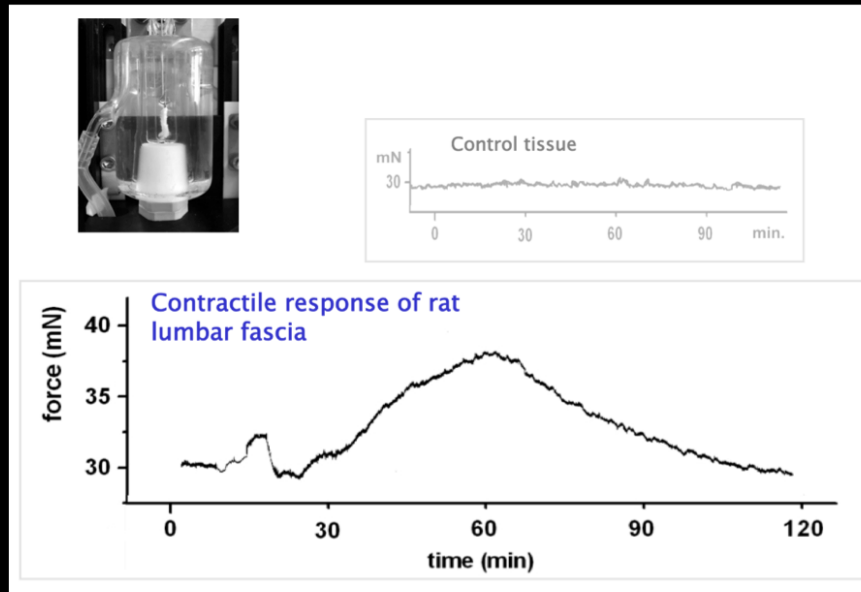
- Suggested by Schleip¹
 - increase in fascial stiffness-improves proprioception and increases muscular activation and coordination
- Spector and others have shown connective tissue cells with muscle properties² (alpha smooth muscle actin)
 - fibroblasts, chondrocytes, osteoblasts
 - thought to help with wound repair
 - myofibroblast cells in fascia

1. Schleip et al, Medical Hypotheses, 2005;65, 273-277.

2. Spector M, Wound Repair Regen, 2002;9(1):11-8.

Fascia is able to contract in a smooth musclelike manner and thereby influence musculoskeletal mechanics

R Schleip, W Klingler, F Lehmann-Horn

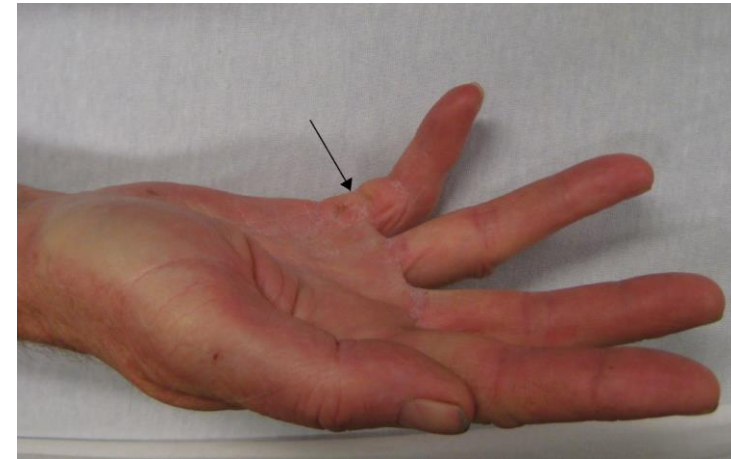
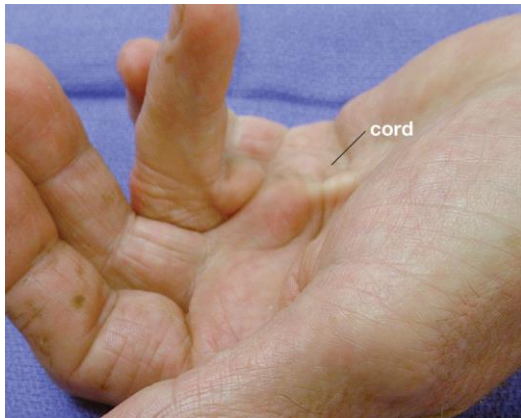


Liepsch D: Proceedings of the 5th World Congress of Biomechanics, Munich, Germany 2006, pp 51-54.

Myofibroblasts contain smooth muscle actin fibers
--can actively contract-slow process

Fascia can Contract Pathologically

- Contains contractile cells¹
- Pathology in fascia contraction -Dupuytren's contracture²



Fascia Cord Released by Needle





What is Scoliosis?

- Curve with 3 dimensional deformity of the spine
- Scoliosis $>25^{\circ}$ reported in 1.5/1000 in US¹
- 70% of pediatric cases—idiopathic² (unknown cause)
- Muscle and fascia not often mentioned in literature
- Variety of treatment possibilities are described
 - Bracing, chiropractic, myofascial release, surgery



What is the Cause of Idiopathic Scoliosis?

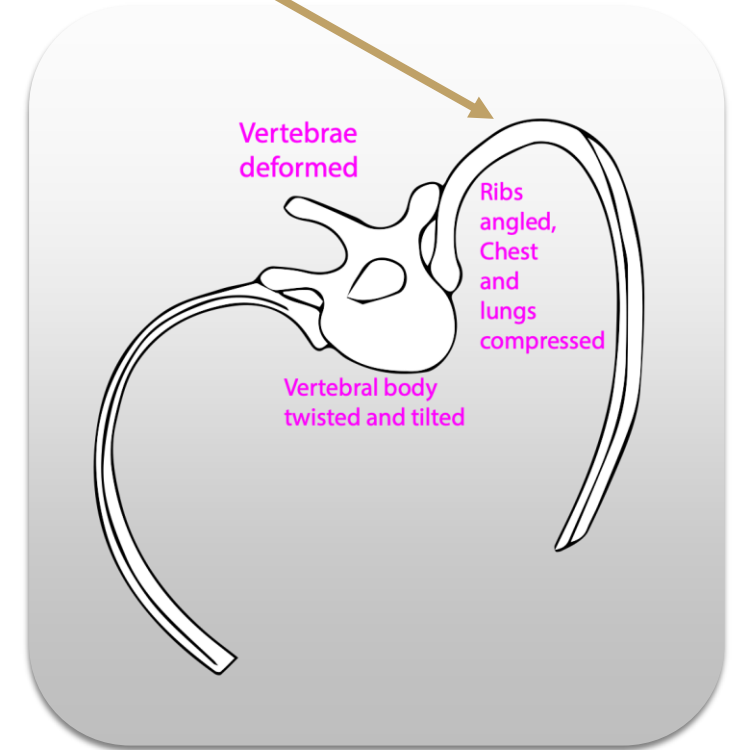
- Fascia of the spiral line or longitudinal lines prevents vertical growth
- Fascia fails to lengthen
- Fascia pathologically contracts
- Spine grows in the path of least resistance – spiral
- Scoliosis is a SPIRAL
- And the fascia can be released similar to Duypetren's



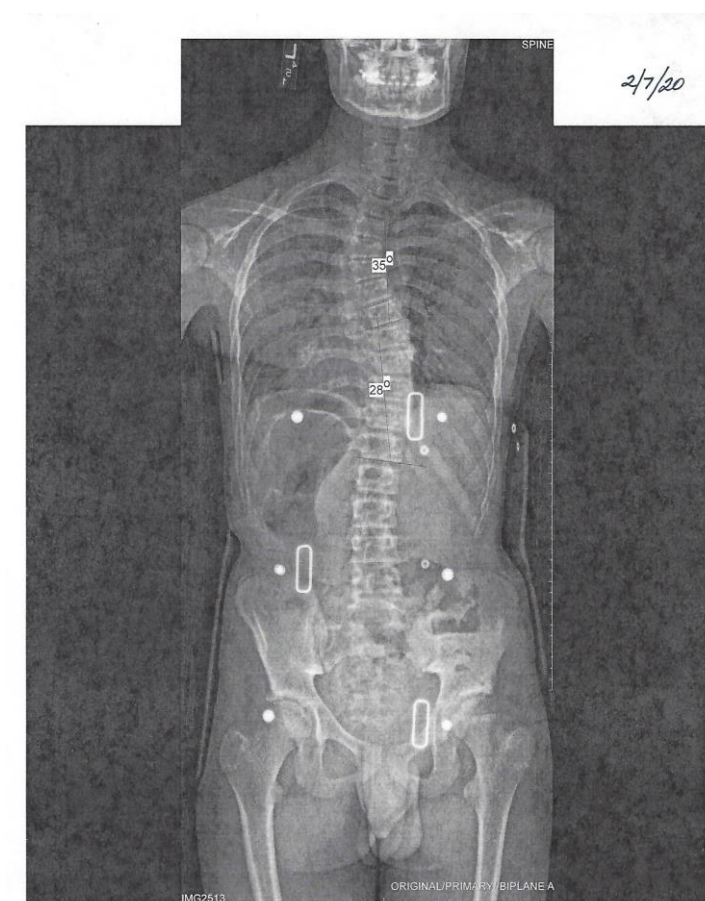
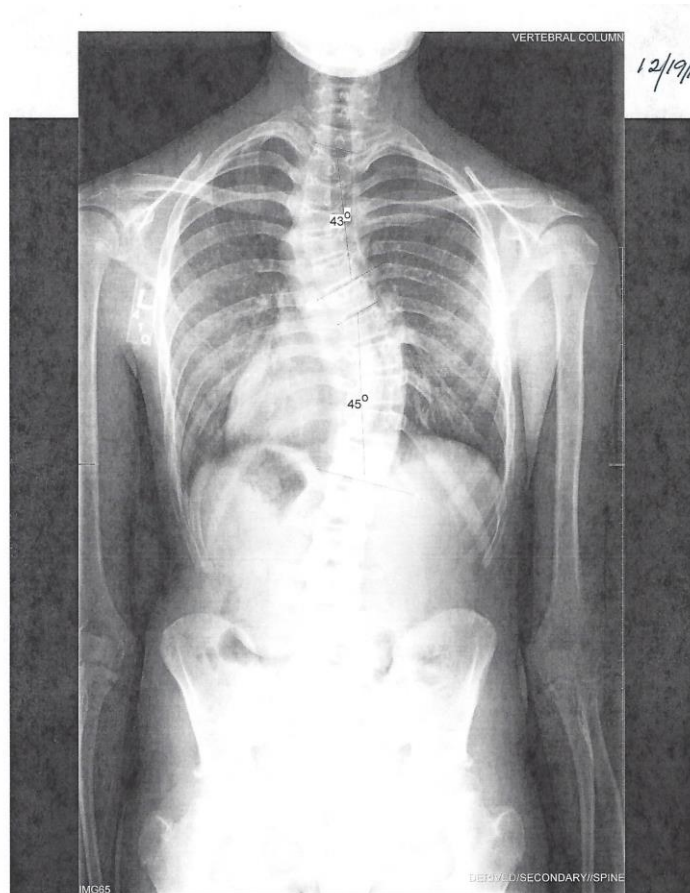
Angle and Hump



Leg length
discrepancy, no
scoliosis



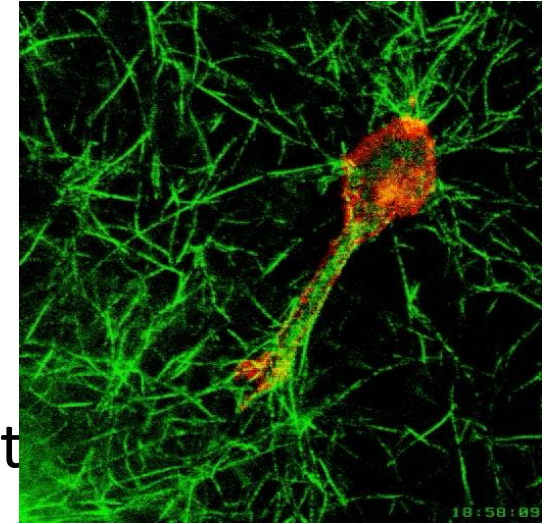
Scoliosis





Bodywork changes Fibroblasts

- Fibroblasts make collagen
- When fibroblasts within muscle fascia are stressed, they secrete soluble mediators as part of repair process (IL-6, IGFs, FGFs, NO)¹
 - IL-6 is up-regulated 24 h after repetitive strain
 - specific biophysical strain patterns (ie. myofascial release) modify the outcome of myoblast differentiation-necessary for muscle repair
- 90 seconds of Osteopathic stretch/compression will undo inflammatory changes caused by 8 hr of strain from repetitive motion²



Human
Fibroblast
Freidl, 2004

1.Hicks et al, J Appl Physiol, August 1; 113(3): 465-472, 2012.

2.Standley, Meltzer, J Bodyw Mov Ther, July; 12(3): 201-3, 2008.



Manual Therapy Variations May Affect Physiological Response to Treatment

- Cao et al, dosed myofascial release (MFR) in bioengineered tendons ⁽¹⁾
- MFR
 - **increased tendon weight**, implying up-regulation of extracellular matrix protein
 - **longer duration increased** angiogenin, interleukin (IL)-3, IL-8, growth colony–stimulating factor, and thymus activation–regulated chemokine
 - **increasing strain magnitude increased** IL-1 β , monocyte chemoattractant cytokine, and regulated and normal T cell expressed and secreted chemotactic cytokine
- Suggests variations in manual therapies may differentially affect physiological responses in vivo

1. Cao et al, J Manipulative Physiol Therapy, 36: 513-521, 2013.

Deep Fascia of the Limbs

Different Structure, Different Function

- Upper limbs more elastic-facilitate movement
- Stronger layers transmit tension at distance, connecting the body for coordination



Anterior region
of the arm



Anterior region
of the forearm



Anterior region
of the thigh



Posterior region
of the leg



Continuity of Fascia

- Three deep layers of fascia in the trunk
 - superficial, intermediate, deep
- Layers merge at well-defined points, guaranteeing coordination among muscle groups¹
 - coupling between gluteus maximus and contralateral latissimus dorsi by posterior layer of thoracolumbar fascia
- Gluteus maximus inserts into iliotibial band, fascia lata, lateral intermuscular septum (divides quadriceps and hamstring), and femur²
 - Helps explain transmission of forces from thoracolumbar fascia to the knee
 - This is the injury that causes radiating sciatica pain – not usually the sciatic nerve or a disc



Fascia

- Can alter mechanics of the body by contracting, cells can change their function (Horwitz 1997)
- Myofibroblasts (density different between body sites)¹
- Telocytes (recently identified between blood vessels, capillaries and nerve endings in organs, lumbar and lower extremity fascia associated with intercellular signaling)²
- Type of collagen fibers present in deep fascia can change depending on hormonal, mechanical and chemical exposure.²
- Extracorporeal shockwave enhances fibroblast proliferation and differentiation by activating gene expression²

1. Fede C, Pirri C, Fan C, Petrelli L, Guidolin D, De Caro R, Stecco C. A Closer Look at the Cellular and Molecular Components of the Deep/Muscular Fasciae. *Int J Mol Sci*. 2021 Jan 30;22(3):1411. doi: 10.3390/ijms22031411. PMID: 33573365; PMCID: PMC7866861.

2. Giordani F, Bernini A, Müller-Ehrenberg H, Stecco C, Masiero S. A global approach for plantar fasciitis with extracorporeal shockwaves treatment. *Eur J Transl Myol*. 2019 Sep 9;29(3):8372. doi: 10.4081/ejtm.2019.8372. PMID: 31579484; PMCID: PMC6767838.



Fascia

- Endocannabinoid receptors 1 and 2 (CB1, CB2) in deep fascia¹
- Modulate fibrosis and inflammation
- Can suppress IL-1B, TNF-a
- Can increase anti-inflammatory cytokines

1. Expression of the endocannabinoid receptors in human fascial tissue C. Fede,¹G. Albertin,¹L. Petrelli,¹ M.M. Sfriso,¹C. Biz,²R. De Caro,¹ C. Stecco¹ ¹Department of Molecular Medicine, University of Padua ²Department of Surgery, Oncology and Gastroenterology, Orthopedic Clinic, University of Padua, Italy



Fascia

- Individual structures are just labels for areas within the singular fascial web:
 - Plantar fascia, Achilles tendon, iliotibial band, thoracolumbar aponeurosis, nuchal ligament, etc.
- No such thing as MCL, LCL

Fascia and Sensory Nervous System

- Mechanoreceptors in fascia
 - **Golgi tendon organs**-measure stretch
 - 90% are in myotendinous junctions, joint ligaments, joint capsules, fascia attachment to aponeuroses¹
 - **Paciniform endings**-measure pressure & vibration
 - myotendinous junctions, spinal ligaments
 - **Ruffini endings**-inform CNS about shear forces
 - ligaments of joints, dura mater

1. Burke, Gandevia, 1990 Peripheral motor system, In: Paxinos G (ed). The Human Nervous System Vol. 1: Academic Press, San Diego, p 133.

Sensory Nerves in Myofascial Tissue

- Tibial nerve
 - 3x more sensory fibers than motor fibers
 - 20% originate in mechanoreceptors—Golgi organs, Pacini corpuscles, Ruffini endings
 - 80% small diameter interstitial muscle/fascia receptors
 - 90% unmyelinated free nerve endings
 - some for pain, thermo/chemoception
 - majority for mechanical tension/pressure

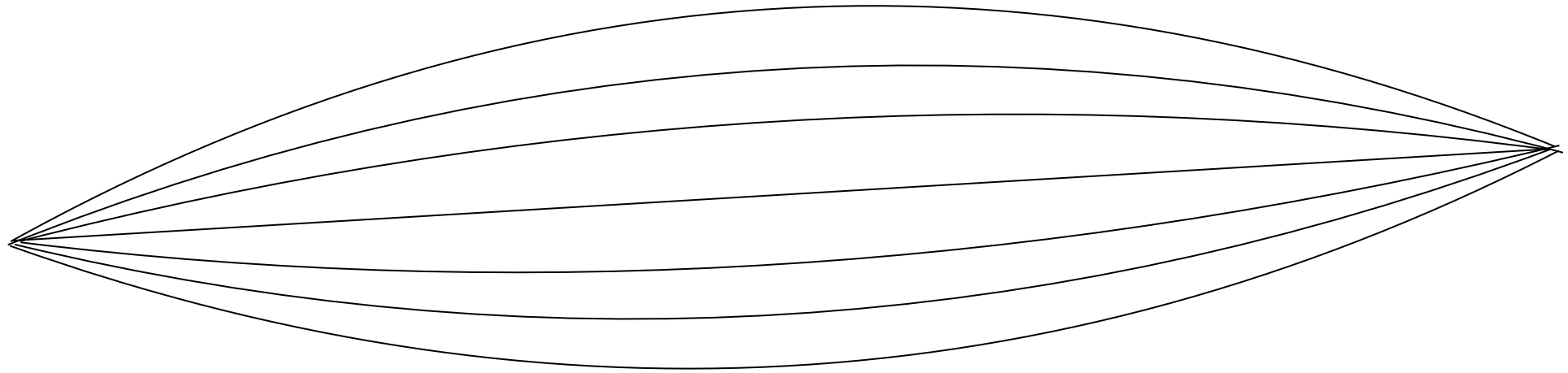
Mitchell & Schmitt, In: Shepherd JT et al. (eds). Handbook of Physiology, Sect. 2, Vol. III, 1977.



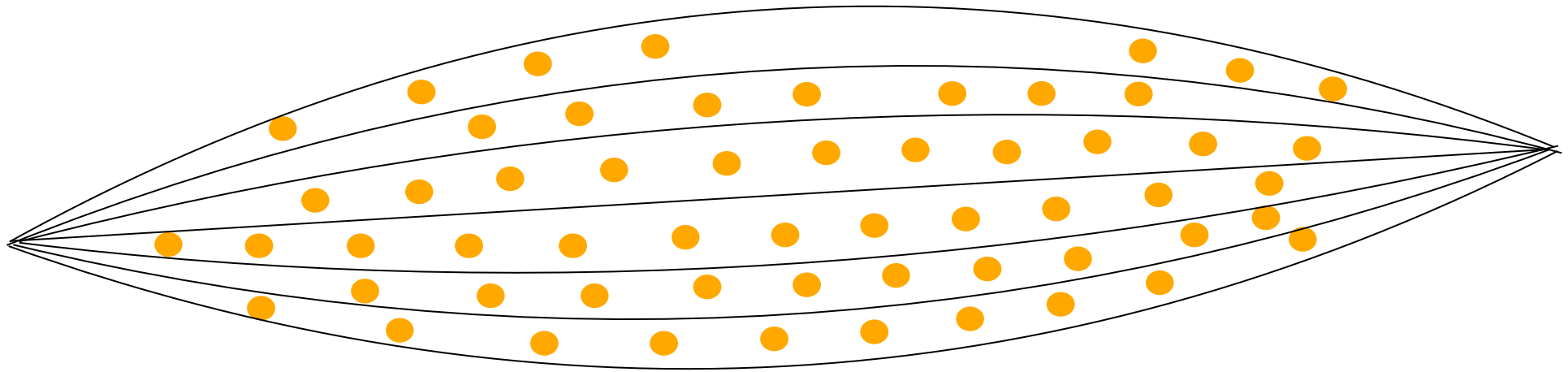
Contrary to what we have been taught: there is no symptomatic difference between:

- Nociceptive pain
- Neuropathic pain
- Sympathetically maintained or mediated pain
- Myofascial pain

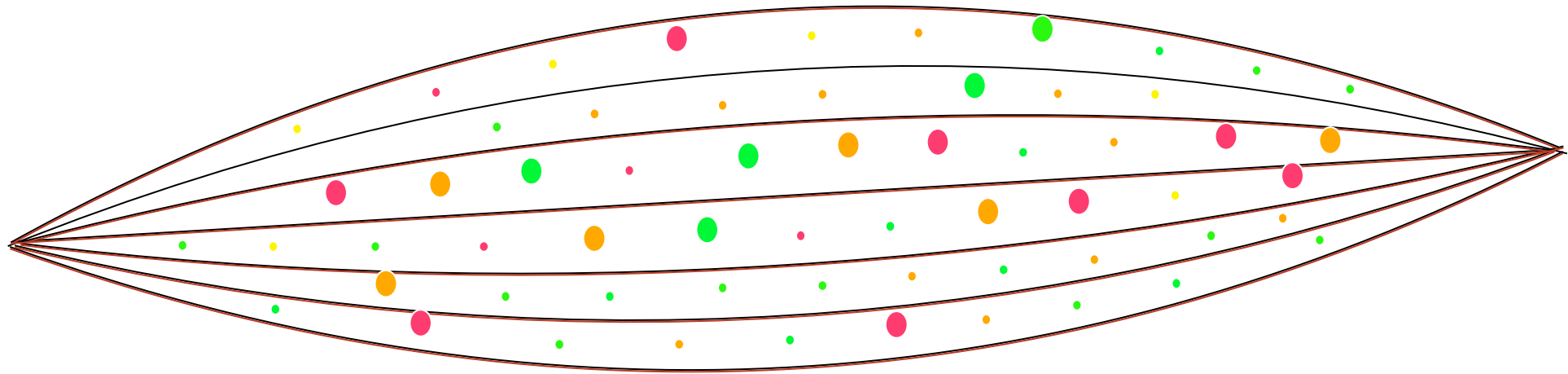
They All Feel the SAME!



Schematic of Strings of Fascia
Through a Muscle



Unmyelinated Free Nerve Endings Within the Fascia



Unmyelinated Free Nerve Endings
Fire With
Pressure or Friction
That Increases with Inflammation from Food
And Weather Changes



Fascia

- More innervated than muscle
- Proprioception and kinesthesia are primarily fascial, not muscular
- Fascia is the ***antenna*** for the brain

Proprioception





With this review of anatomy

- Let's look at myofascial pain
- What is a trigger point?
- How do they form?
- How can we stop the pain?

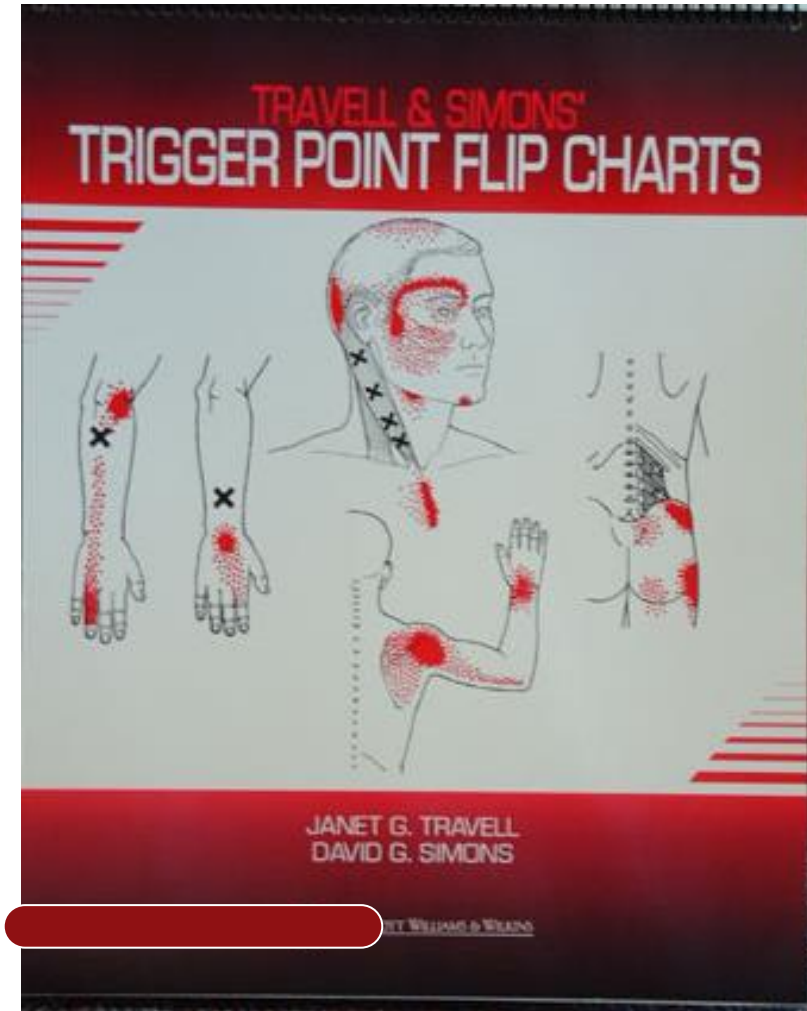


Myofascial Trigger Points

- Generate 2 pain patterns all the time
 - Localized and referred (not always conscious)
- Quality of pain
 - Any sensation
 - Numbness, tingling, aching, burning, cramping, itch, tickle, sharp, dull, achey
- No sensation of pain that cannot come from muscle and fascia

Treasure Map

- X's represent 'kinks' (trigger points) in myofascial
- Red speckles represent location of unpleasant symptoms



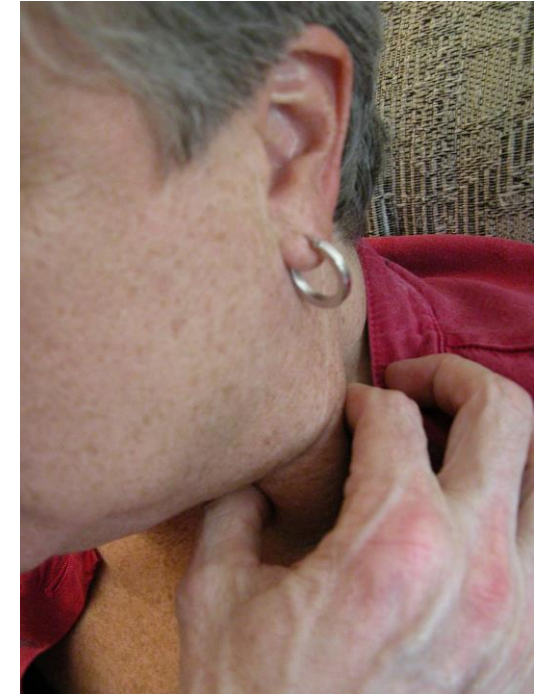
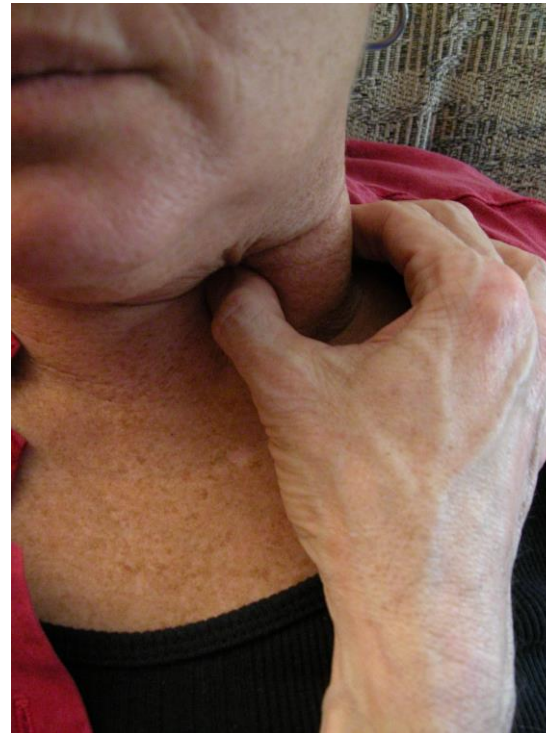


Head and Neck Pain



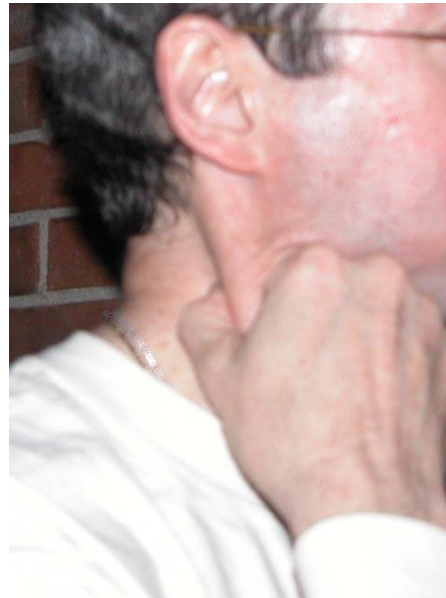
Palpating Sternocleidomastoid Muscle Trigger Points

- Examining someone else



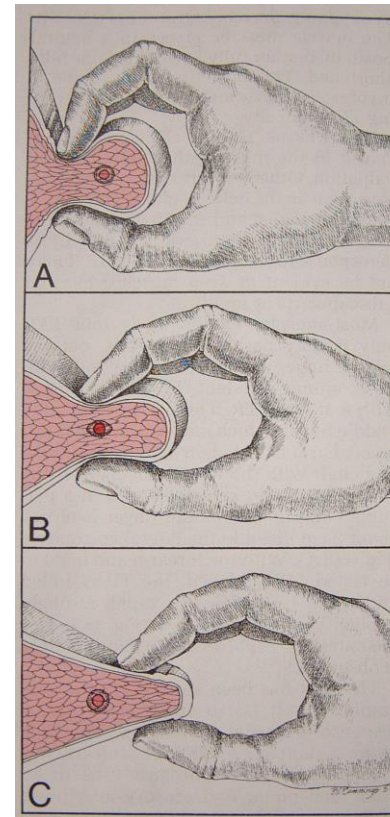
Palpating Sternocleidomastoid Muscle Trigger Points

- Examining yourself
 - Index finger in front
 - Right hand—right neck



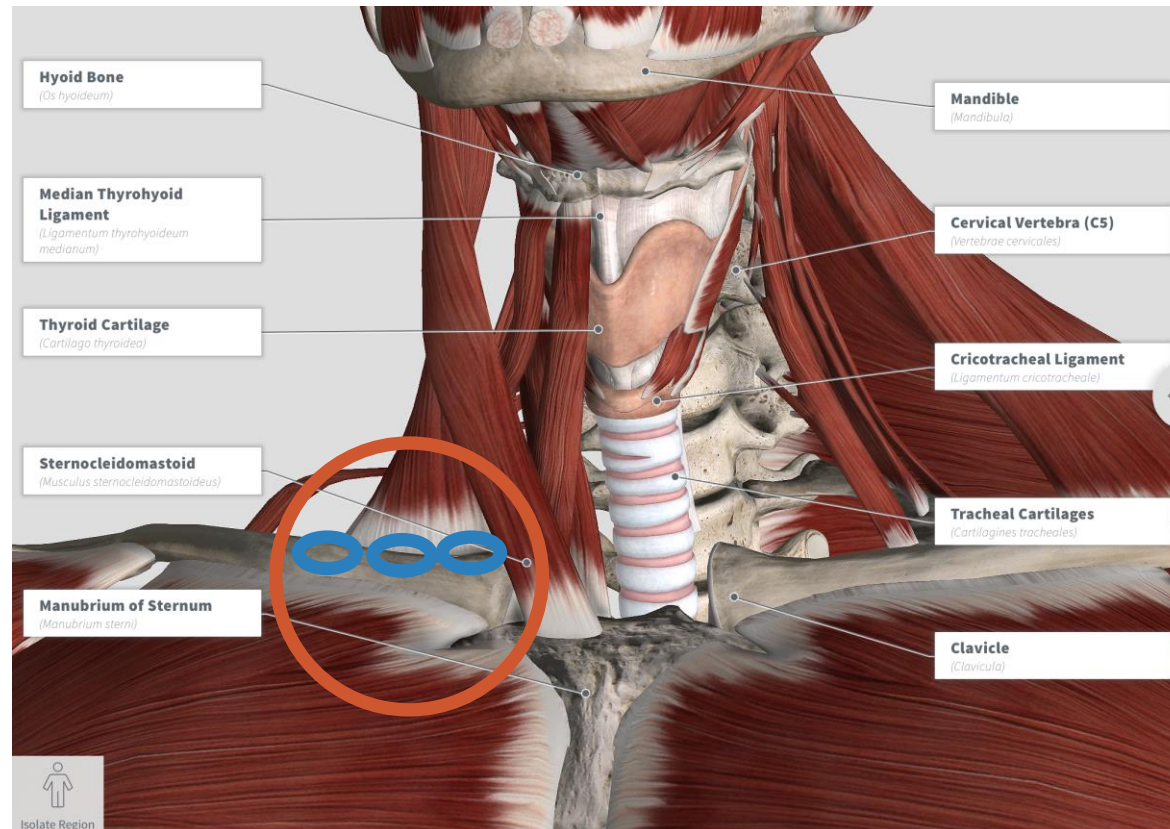
Pinch Grasp and Palpate

- As fingers come over the cross section of ropey band, TrP is tightest, tenderest part of band. Not necessarily more discrete
- May be surprisingly tender



Now Palpate the Anchor/Enthesis

- Run your finger over the top of clavicle
- Push IN and DOWN
- Appreciate surprising tenderness and discomfort—local and maybe radiating to your head or face



Palpate SCM Enthesis on Clavicle

- Run your finger over the top of clavicle
- Push IN and DOWN
- Appreciate surprising tenderness and discomfort—local and maybe radiating to your head or face
- This is the injury that caused TrPs in the SCM





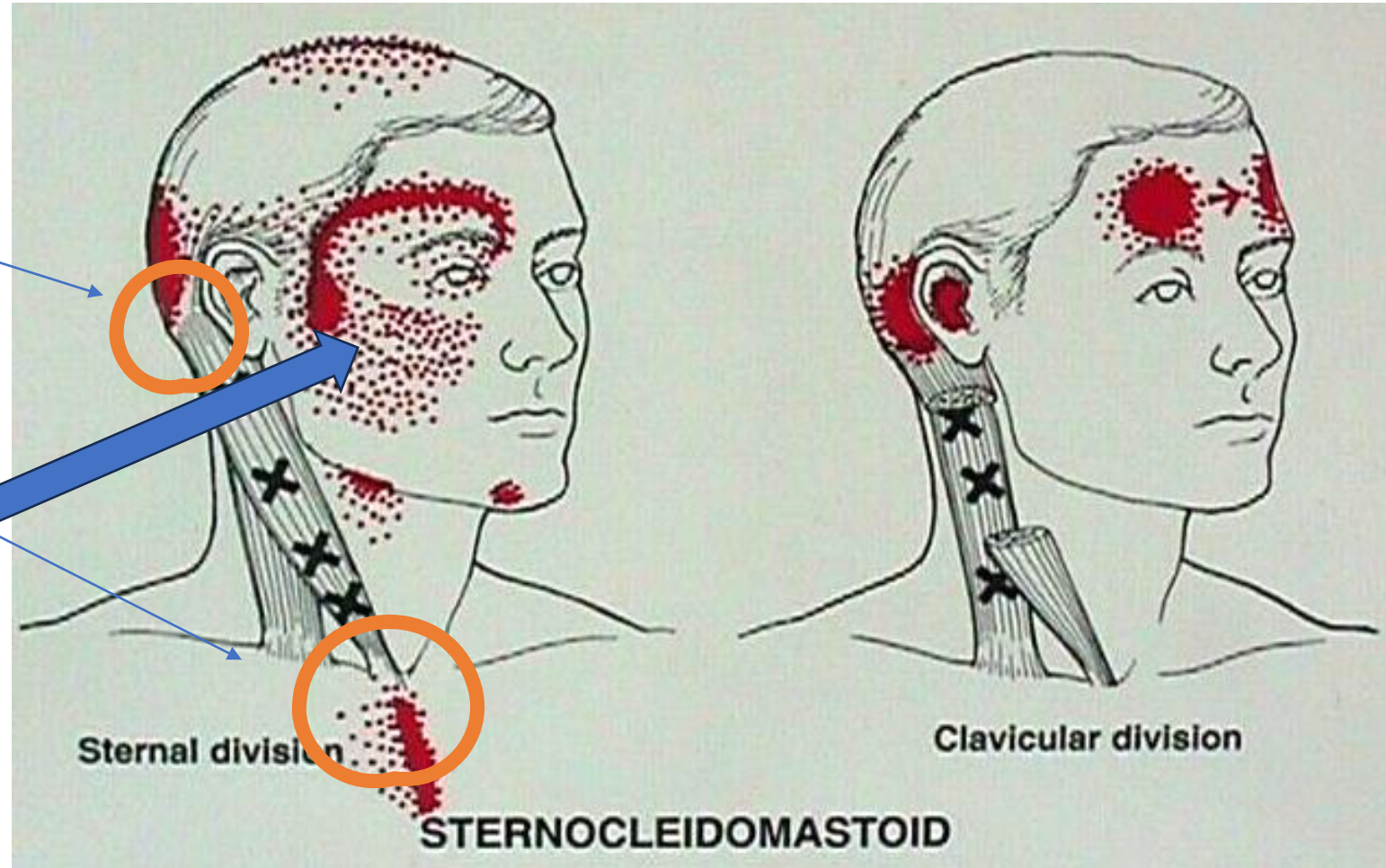
Where did that injury come from?

- First time as an infant, someone picked you up by your shoulders and forgot to bring your head
- Next—pushed down on playground, head snapped back
- Others? MVA, Falls?
- Some you do not remember..

One end of the injury
Mistakenly called occipital neuralgia

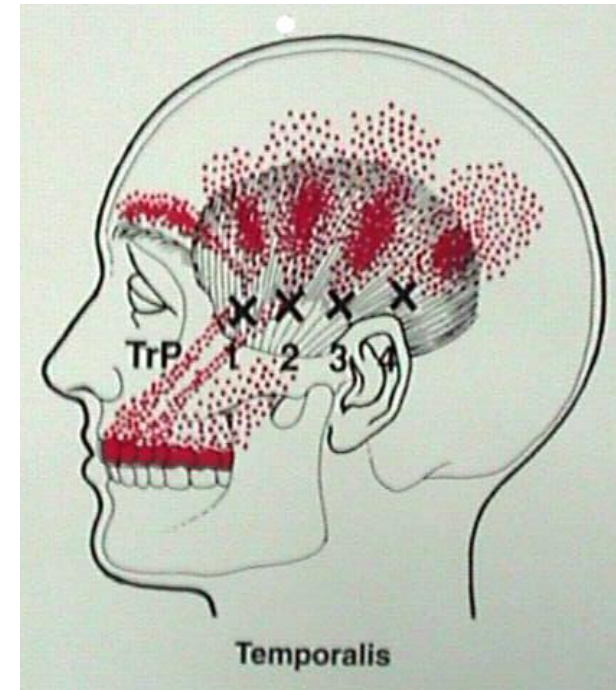
Other end of the injury

Migraine and Trigeminal Neuralgia
pain that comes from these injuries
and these kinks in the fascia



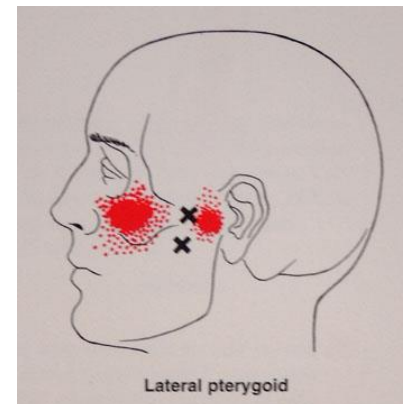
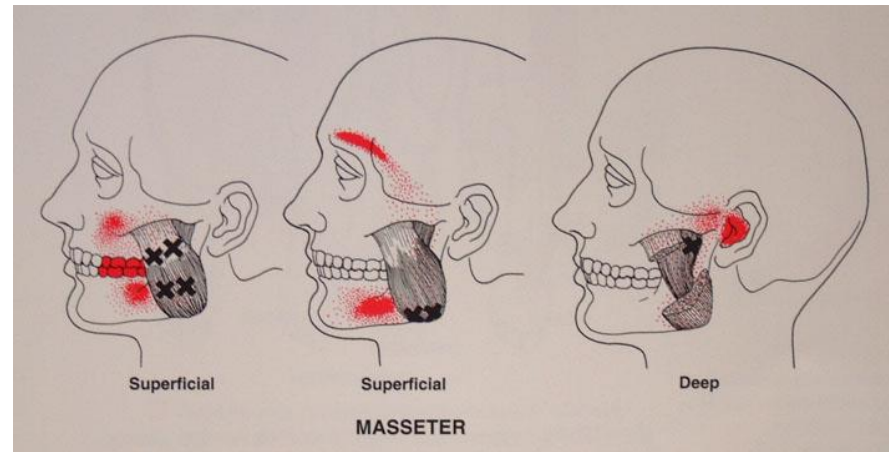
Temporalis – injury from chewing and jaw trauma including whiplash

Patient had 4 root canals in that quadrant before dentist considered pain might not be coming from the teeth



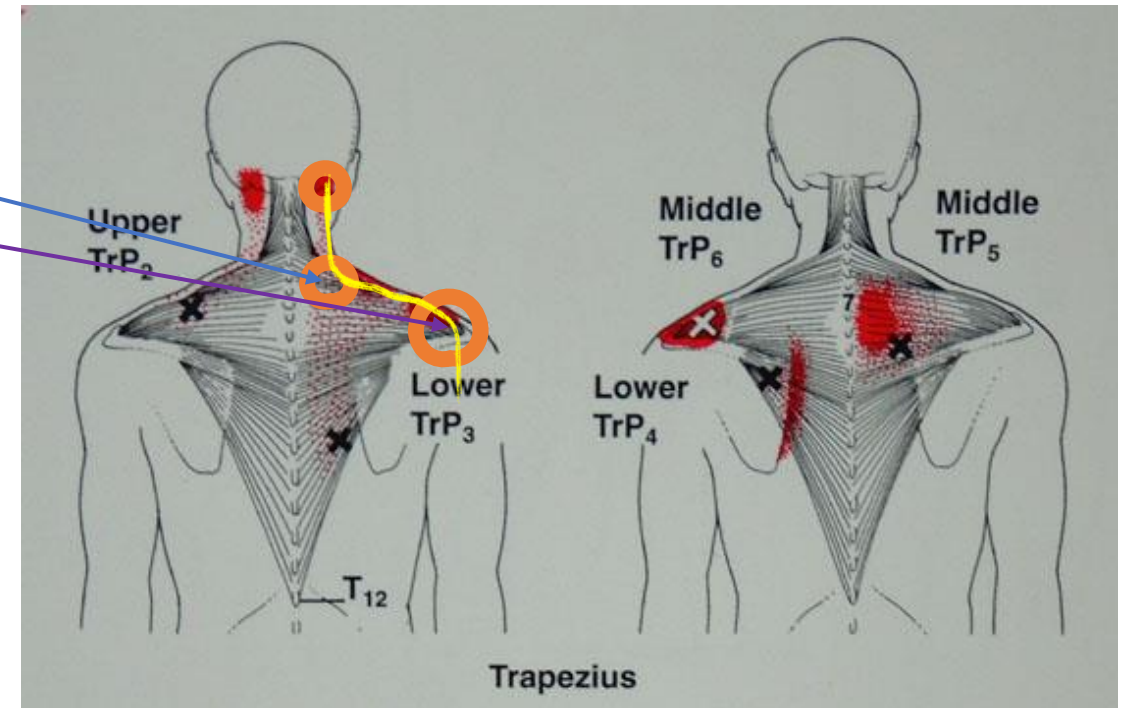
Masseter and Pterygoid muscles

- Make sinuses and teeth hurt
- Make inner ear hurt



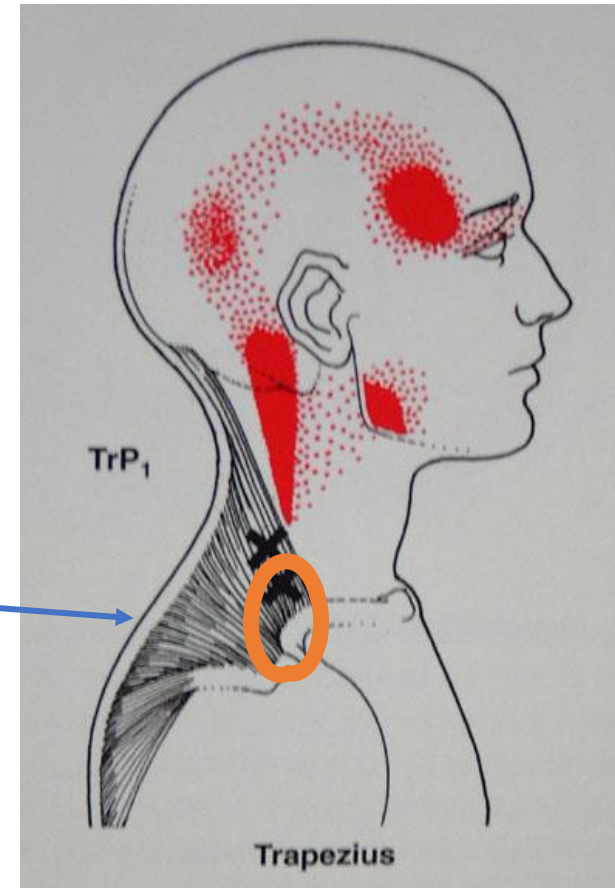
Upper Trapezius

- Where did these injuries come from?
- Upper trapezius is strong enough to carry book bag, lift suitcase, hold up the world
- But where the muscle anchors peripherally and centrally
- Isn't strong enough to hold together when you pull that hard
- You tear from all 4 ends and twist into ropey bands and TrPs
- That's why upper traps are tight
- They are glued together and tender most likely due to what immune system does with fascia for 3-5 weeks when exposed to tiniest amount of dairy..most likely from cow



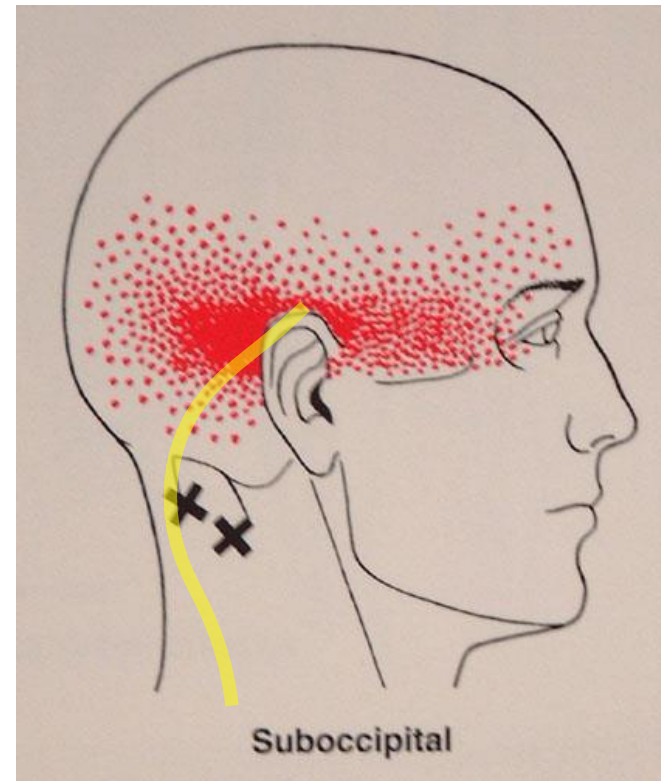
Upper Trapezius

- Same tenderness as SCM on clavicle



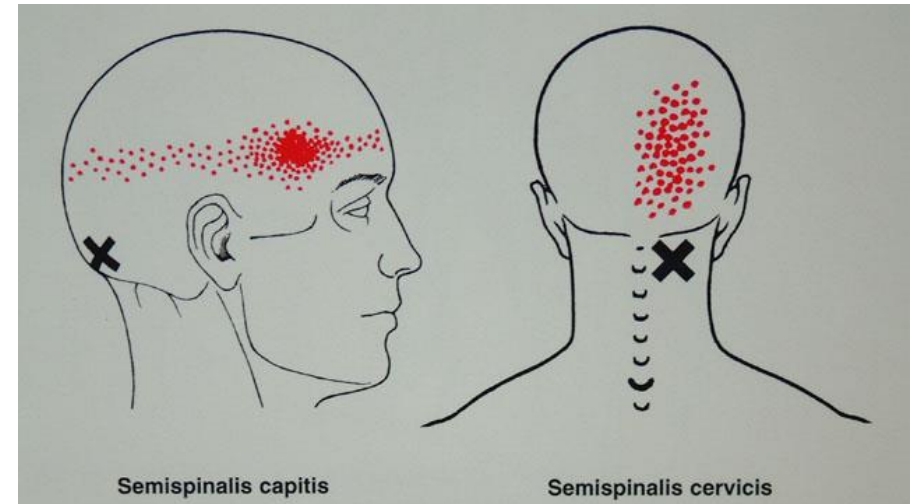
Suboccipital muscles

- IF you have these TrPs and don't get headaches
- Don't complain



Nowhere do you need to be perfect To Get out of Pain!

You just need to be 99%
ignorable everywhere...



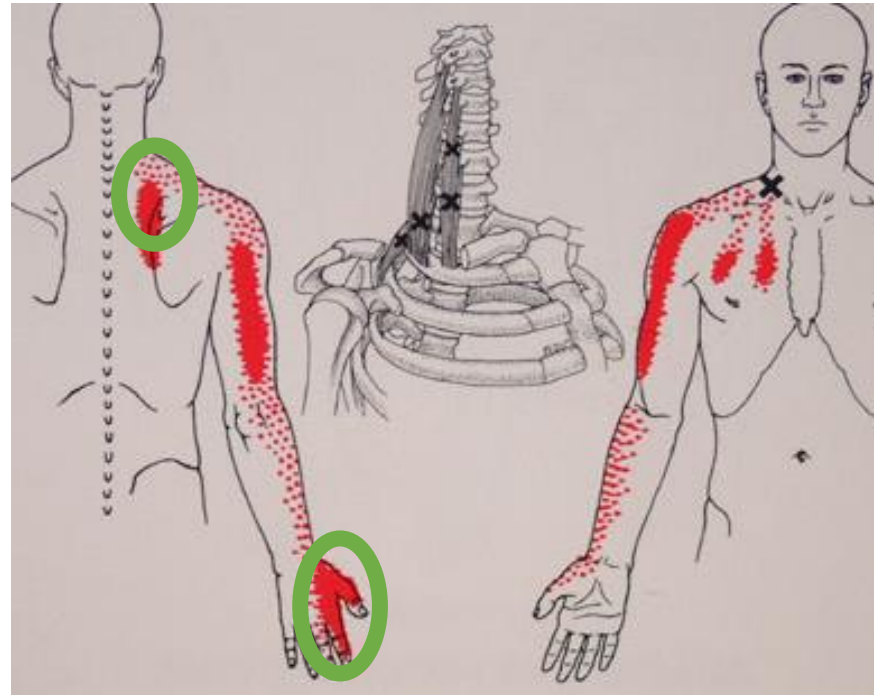


Upper Extremity Pain



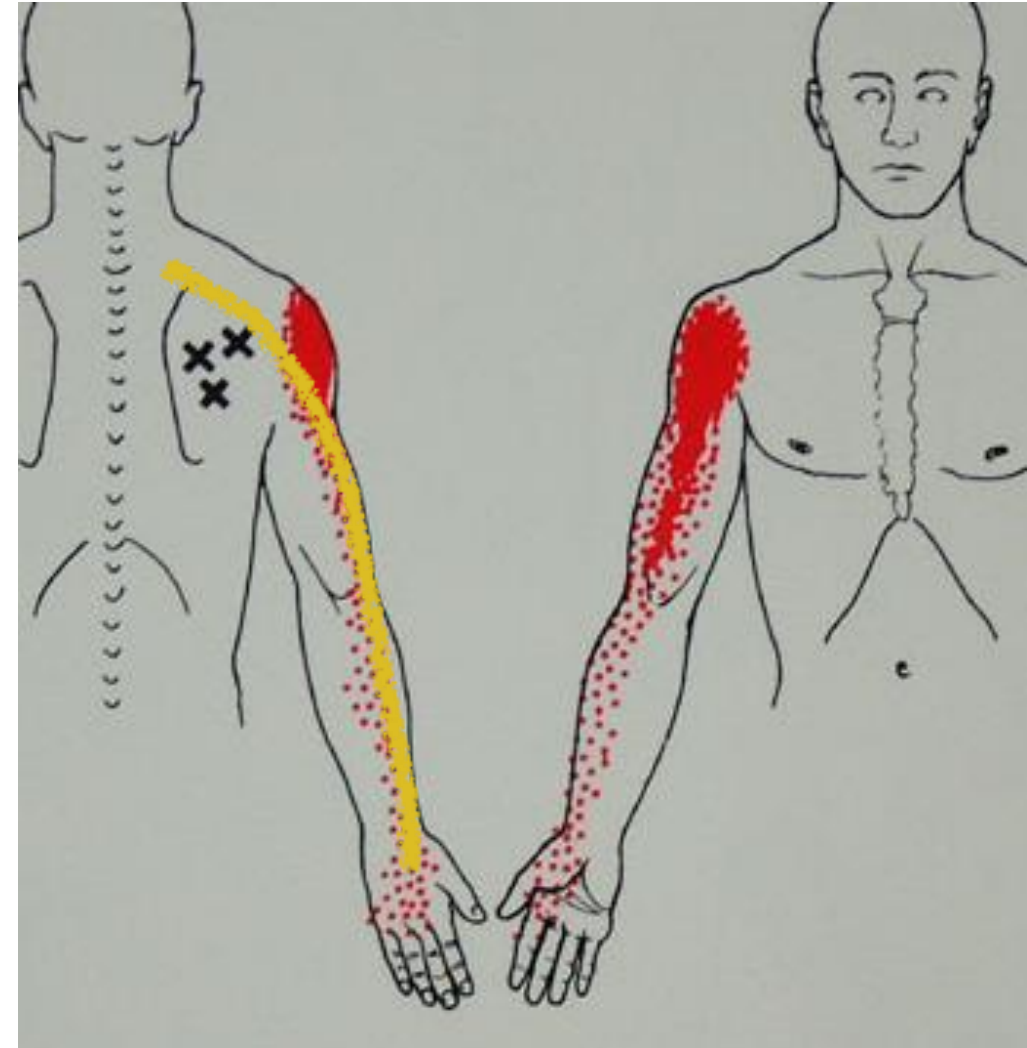
Scalenes

- Cervical adjustment might reduce hand numbness thought to be CTS



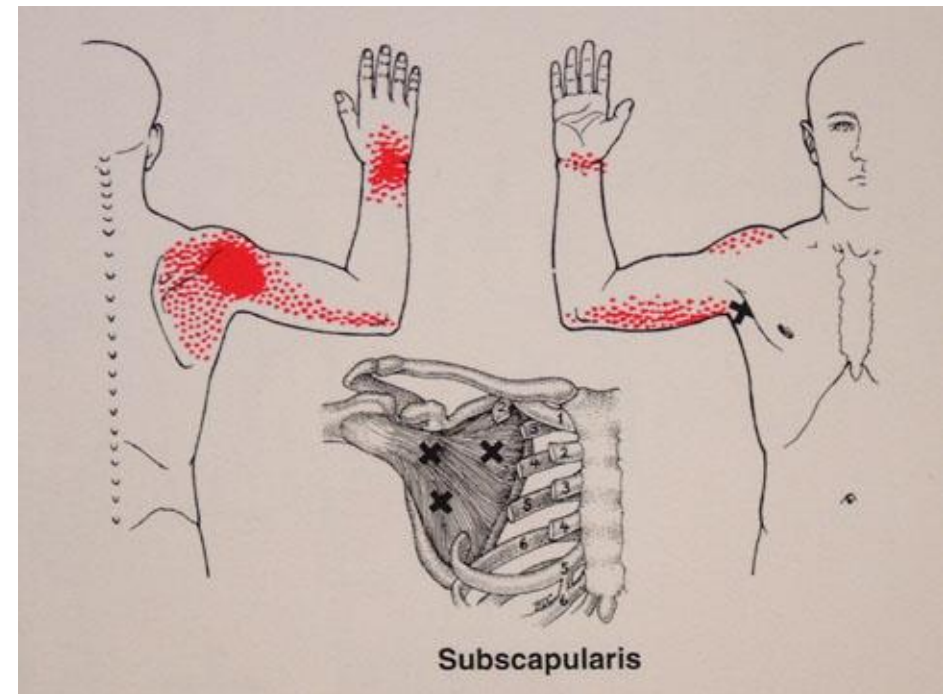
Infraspinatus

- Cornerstone muscle for all pain above level of bra strap – hand, upper extremity, neck, head
- Injuries to origin (surface of scapula) and insertion (infraspinatus tendon)



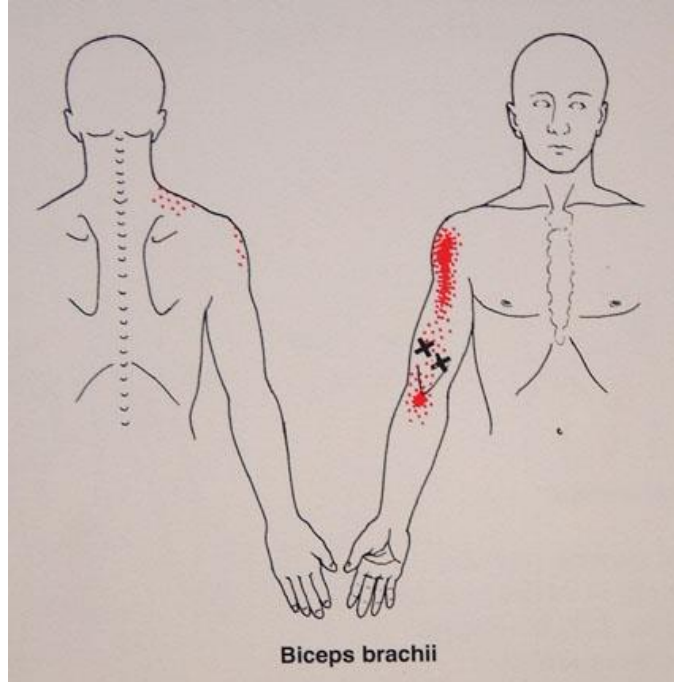
Subscapularis

- Most commonly injured throwing a football too far without warm up





Biceps

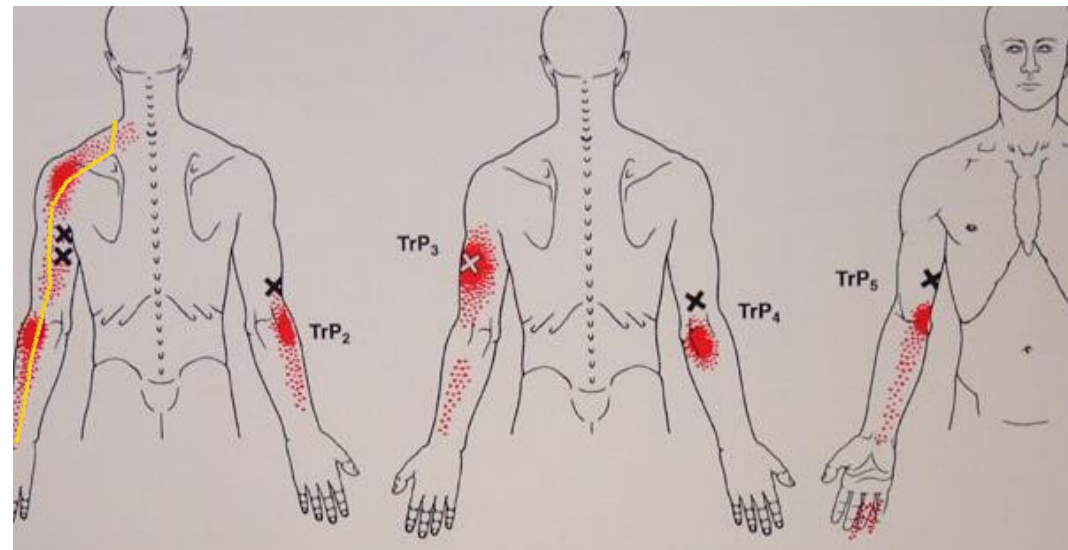


Feel your own



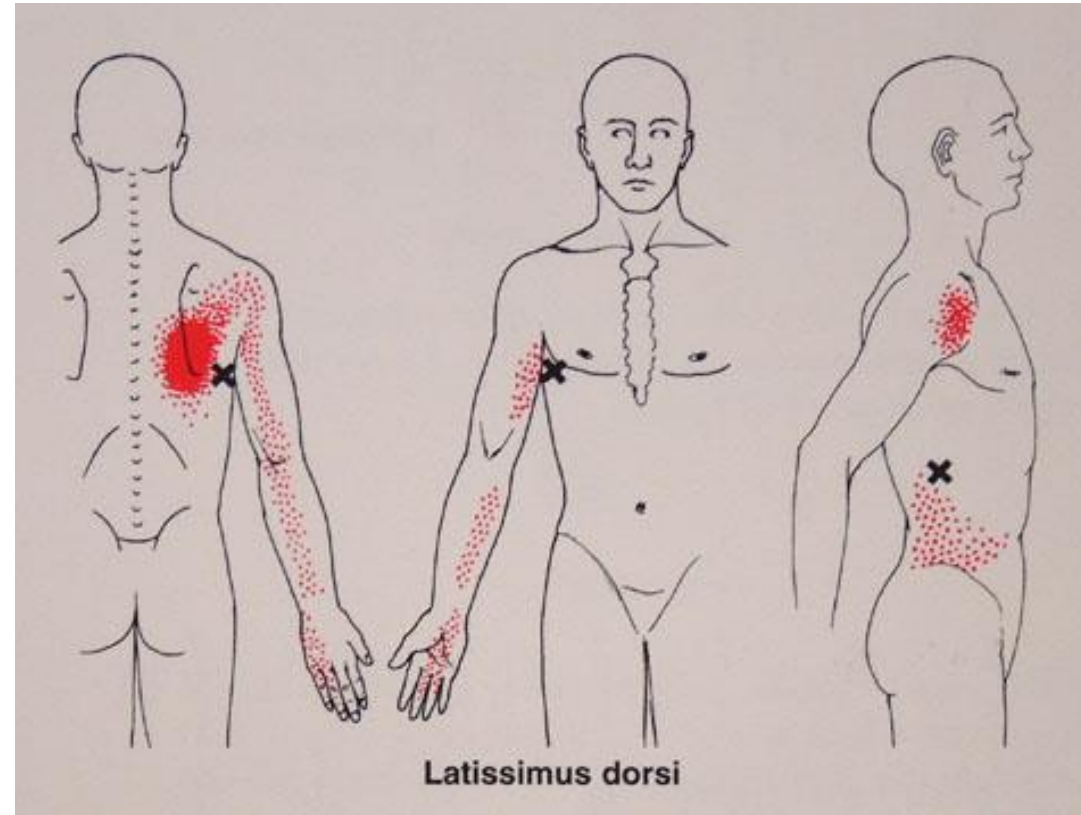
Triceps

- Can make your whole arm ache
- Can be part of shoulder pain
- Treatment can help reduce shoulder pain



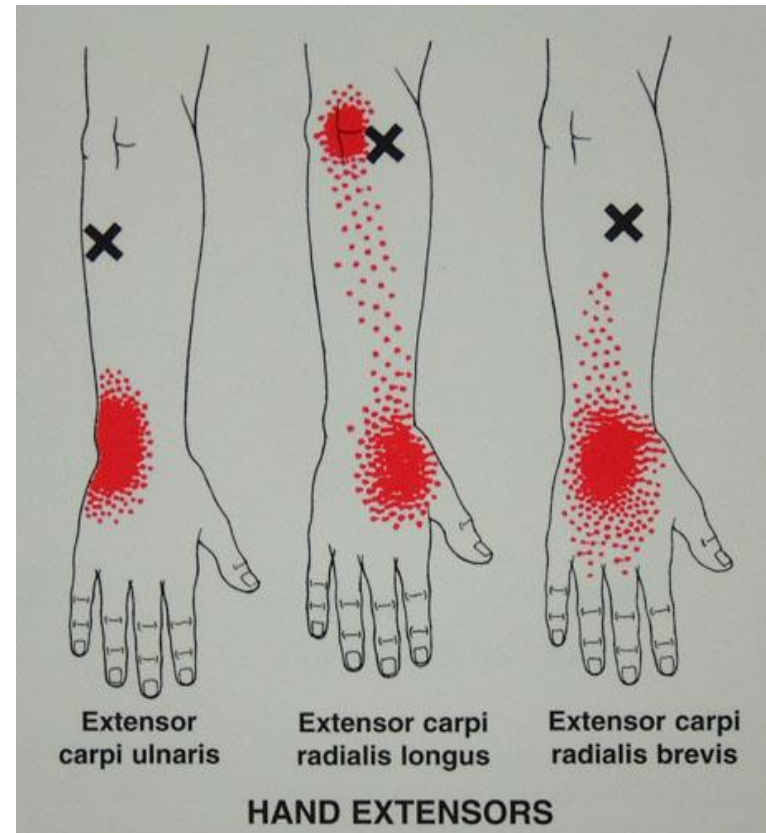
Latissimus

- Pleurisy pain
- Typical pleurisy IS NOT inflammation as we were taught



Wrist Dorsiflexors (extensor wad)

- Talking finger demo



Talking finger — with a bandaid it speaks with an accent





Low Back Pain

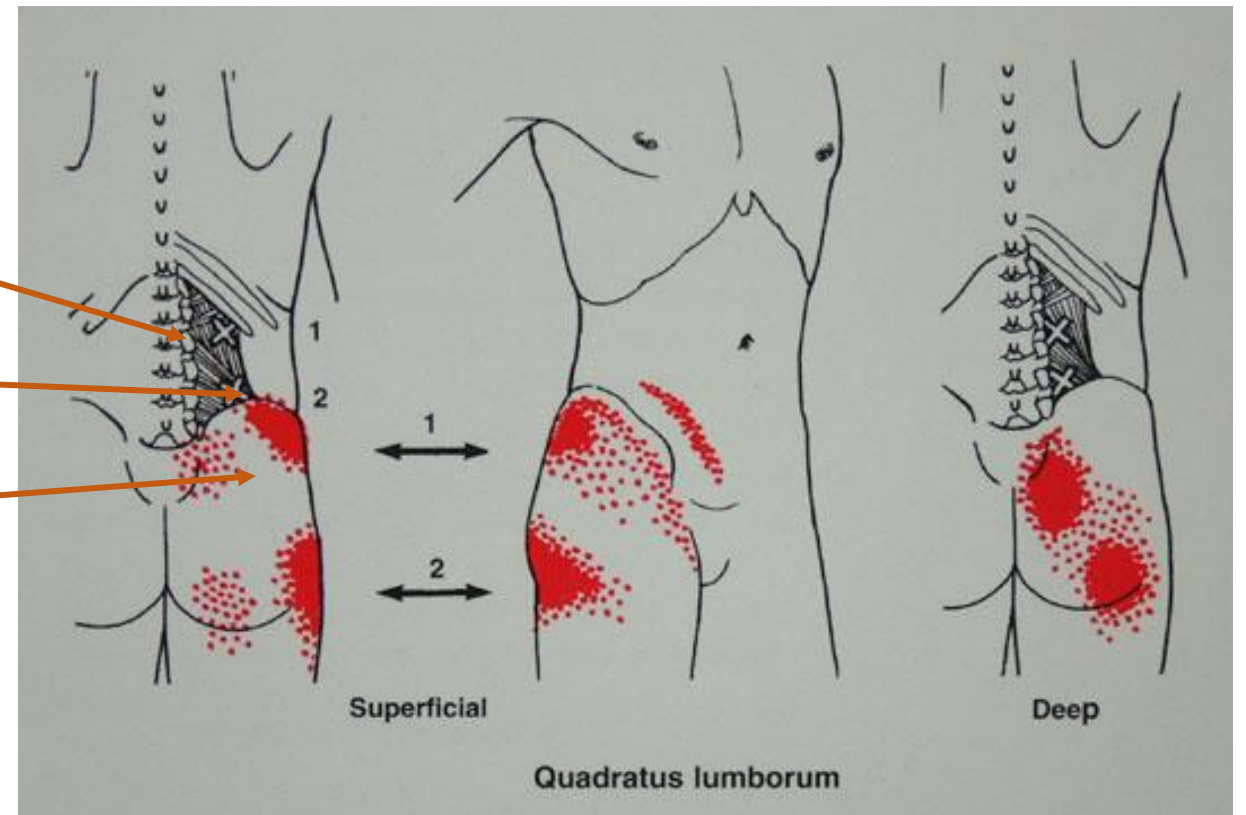
It feels like pain is in your lower back

BUT

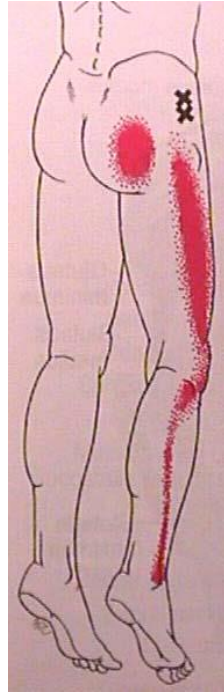
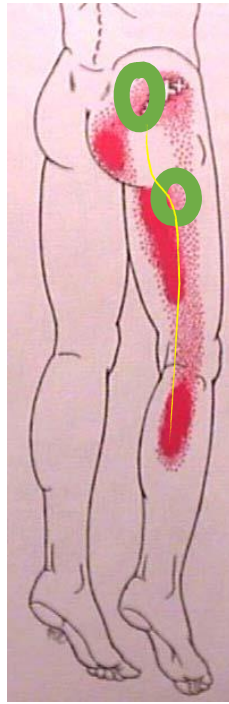
Where specifically are you tender?

Lower back and quadratus lumborum

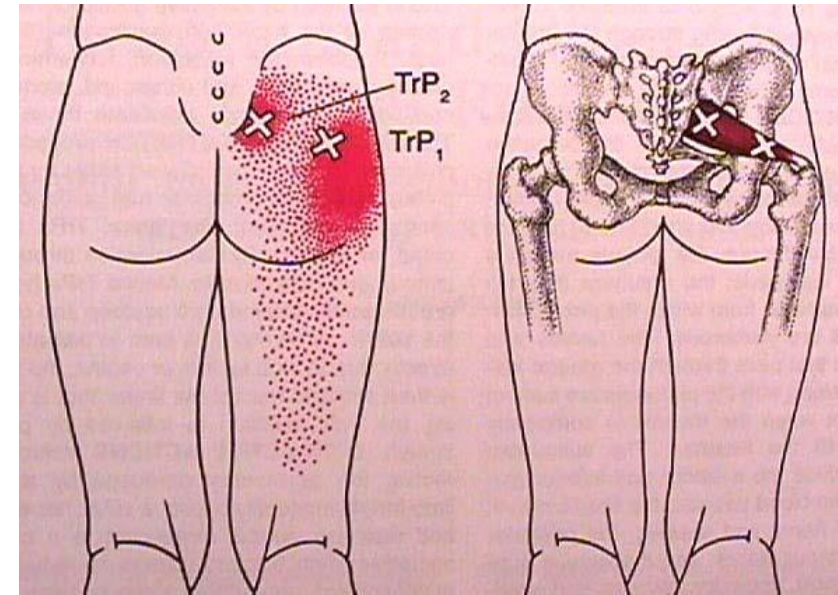
- Lumbar tenderness?
- Tender fascia insertions to top of iliac crest?
- Gluteal tenderness?



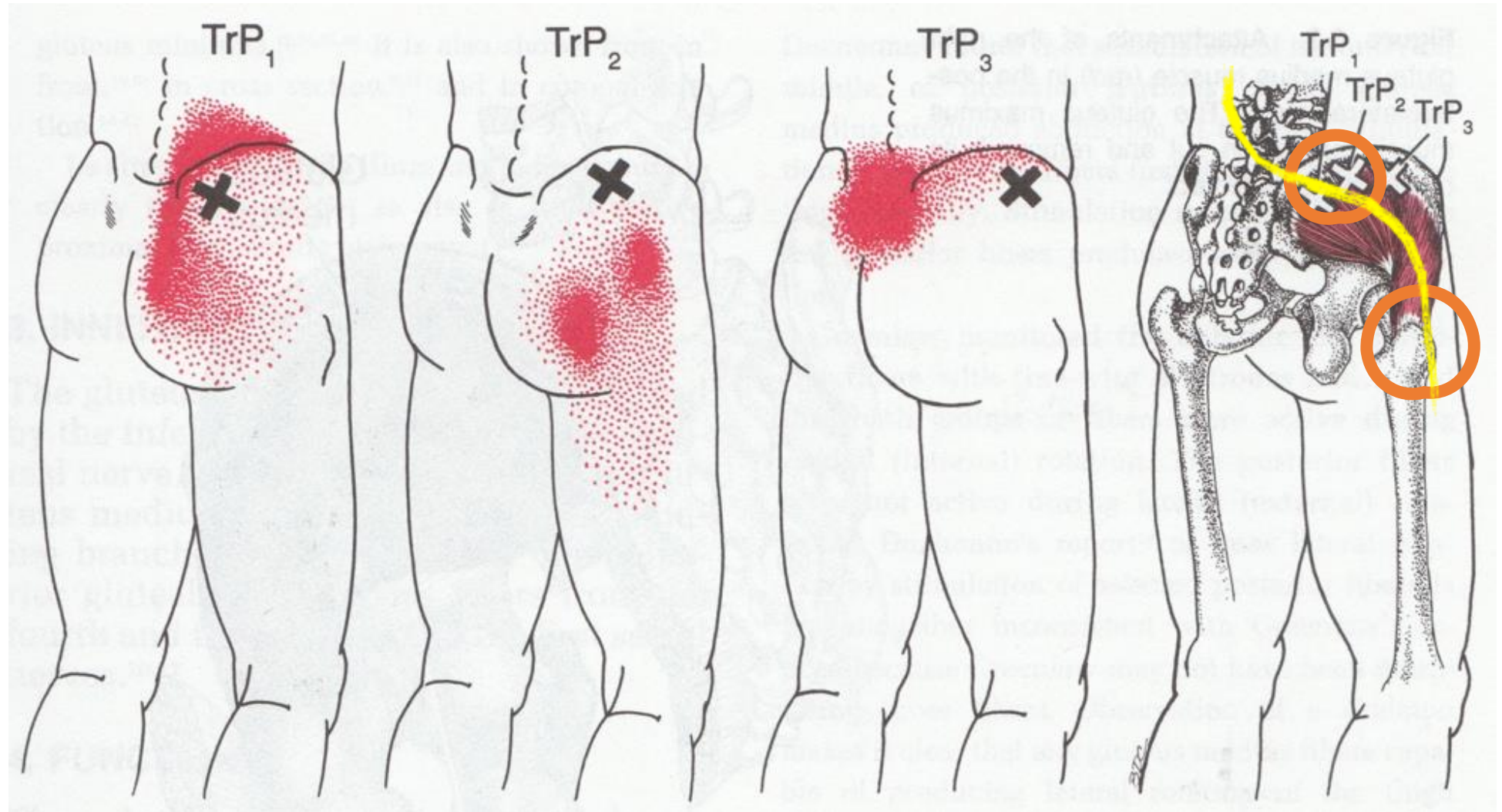
Radiating pain,
numbness, etc.



Piriformis syndrome
is over rated

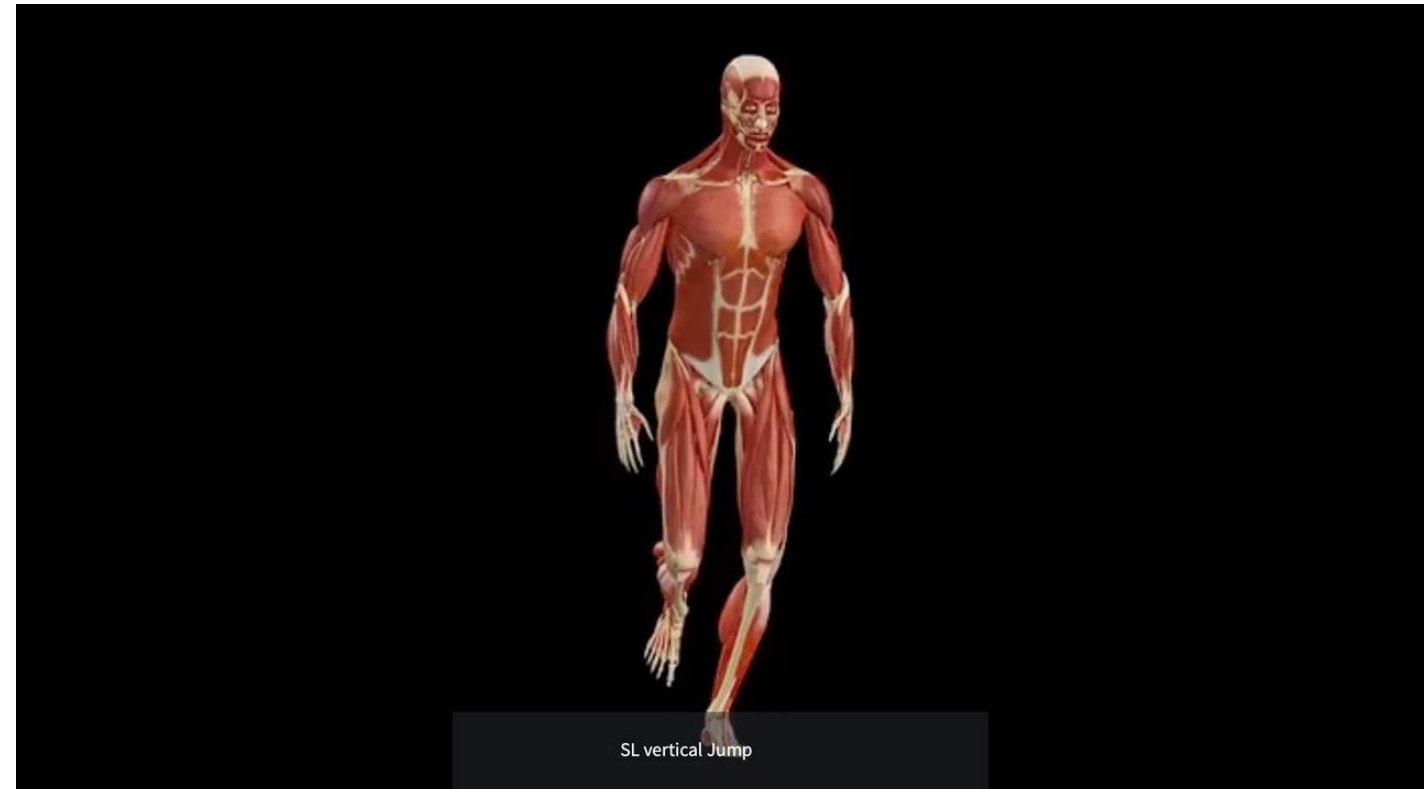


Gluteals



Injury to gluteals – impact from jumping and landing

- Most injuries that cause low back pain started in childhood
- Jumping down the steps
- Jumping out of the swingset
- Jumping off the monkey bars
- At least 30% jumped off the roof
- Some did the second story



SL vertical Jump

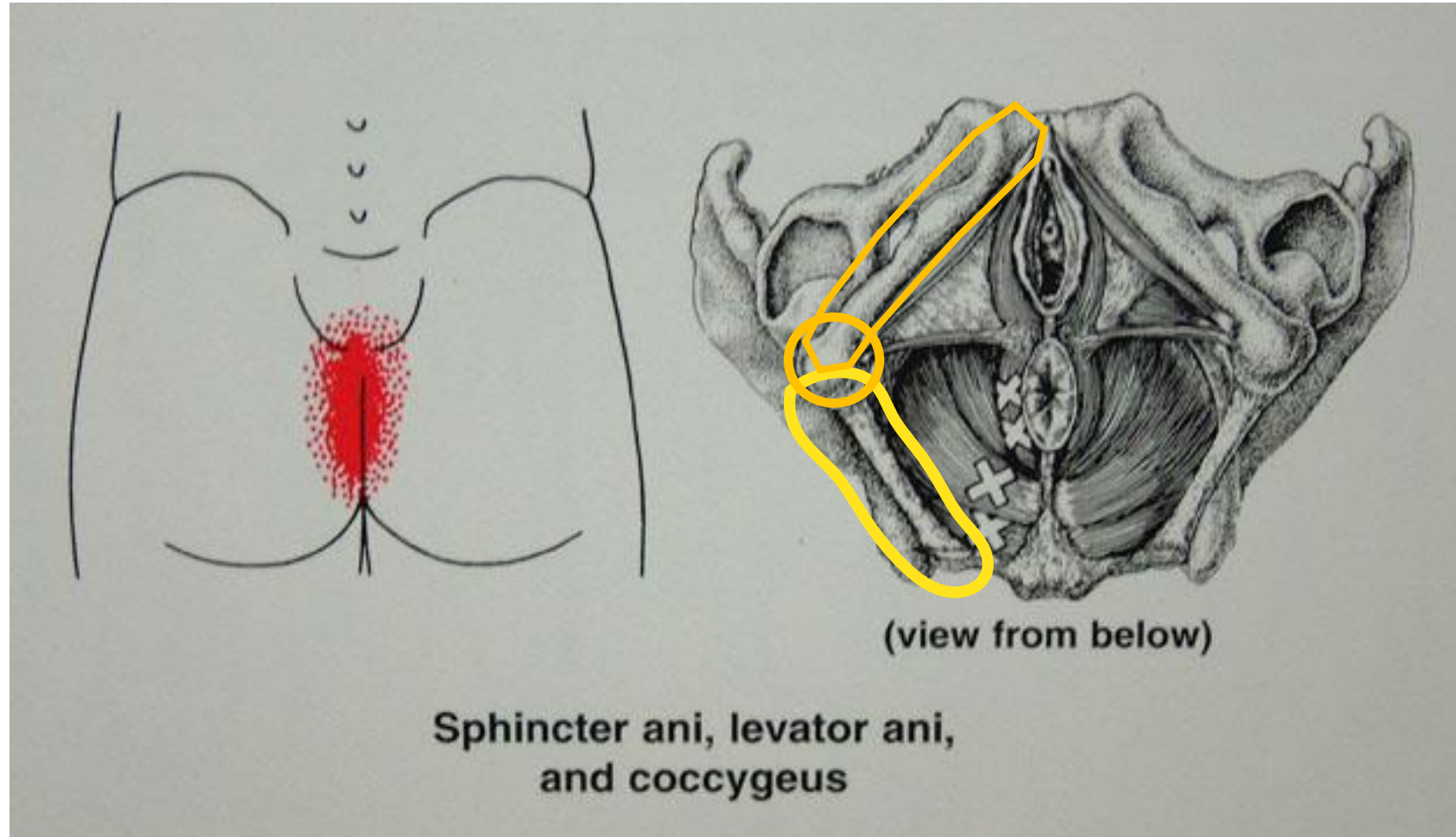
Ever notice men lose their butt muscle as they get older?

- Your body will not let you be strong enough to tear yourself apart from the inside, so gluteals atrophy so the less resilient anchors do not get more injured.



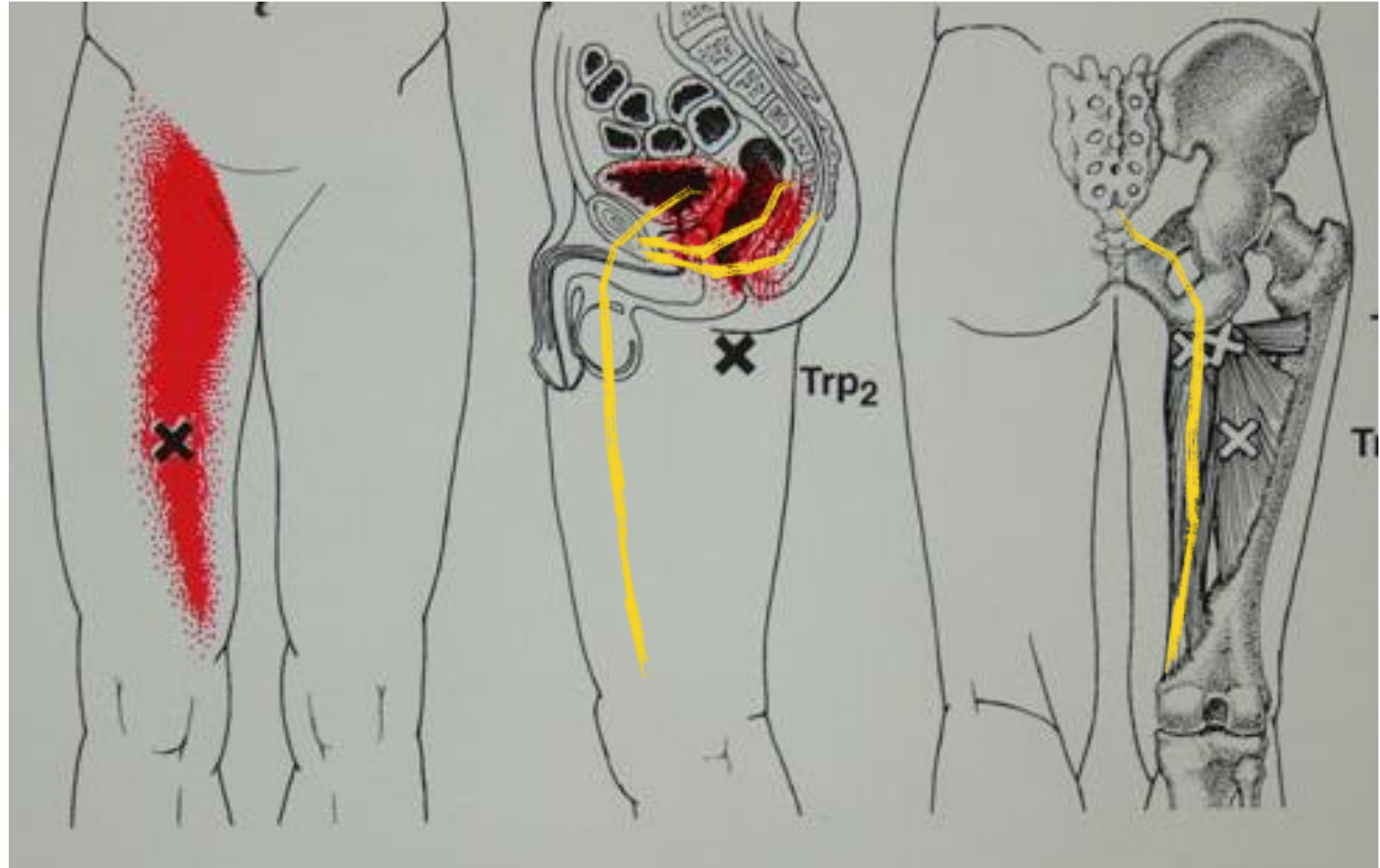
Pelvic Pain

Much more than the pelvic floor...



Pelvic Pain

- If this muscle is tender, can also cause pain thought to be:
- Prostate
- Vagina
- Bladder
- Dysuria





Lower Extremity Pain

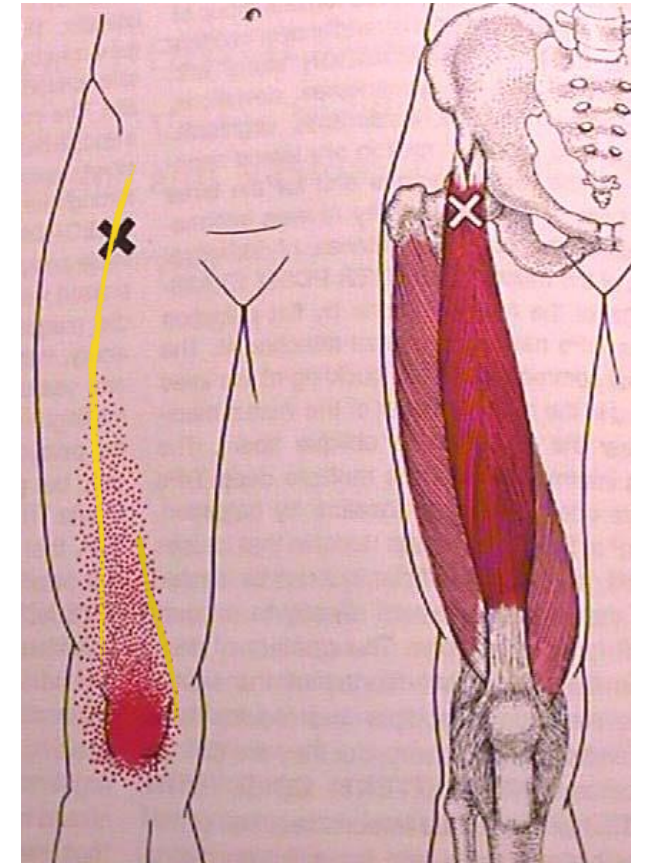
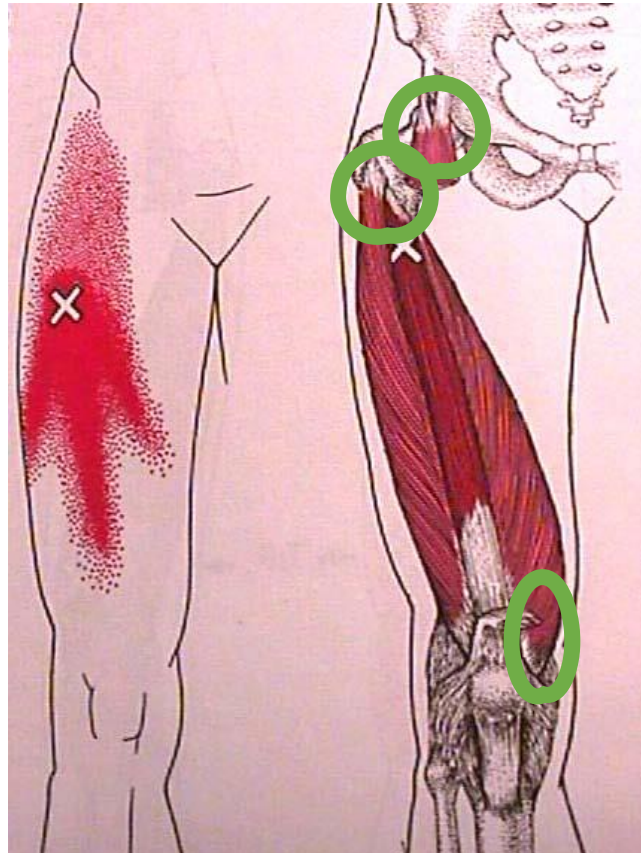


Why does the leg give out In Back Pain Patients?

- NOT generally lumbar disc pushing on nerve
- NOT generally from lower back
- Where is the injured enthesis?
- How do you find it?
- How do you 'fix' it?

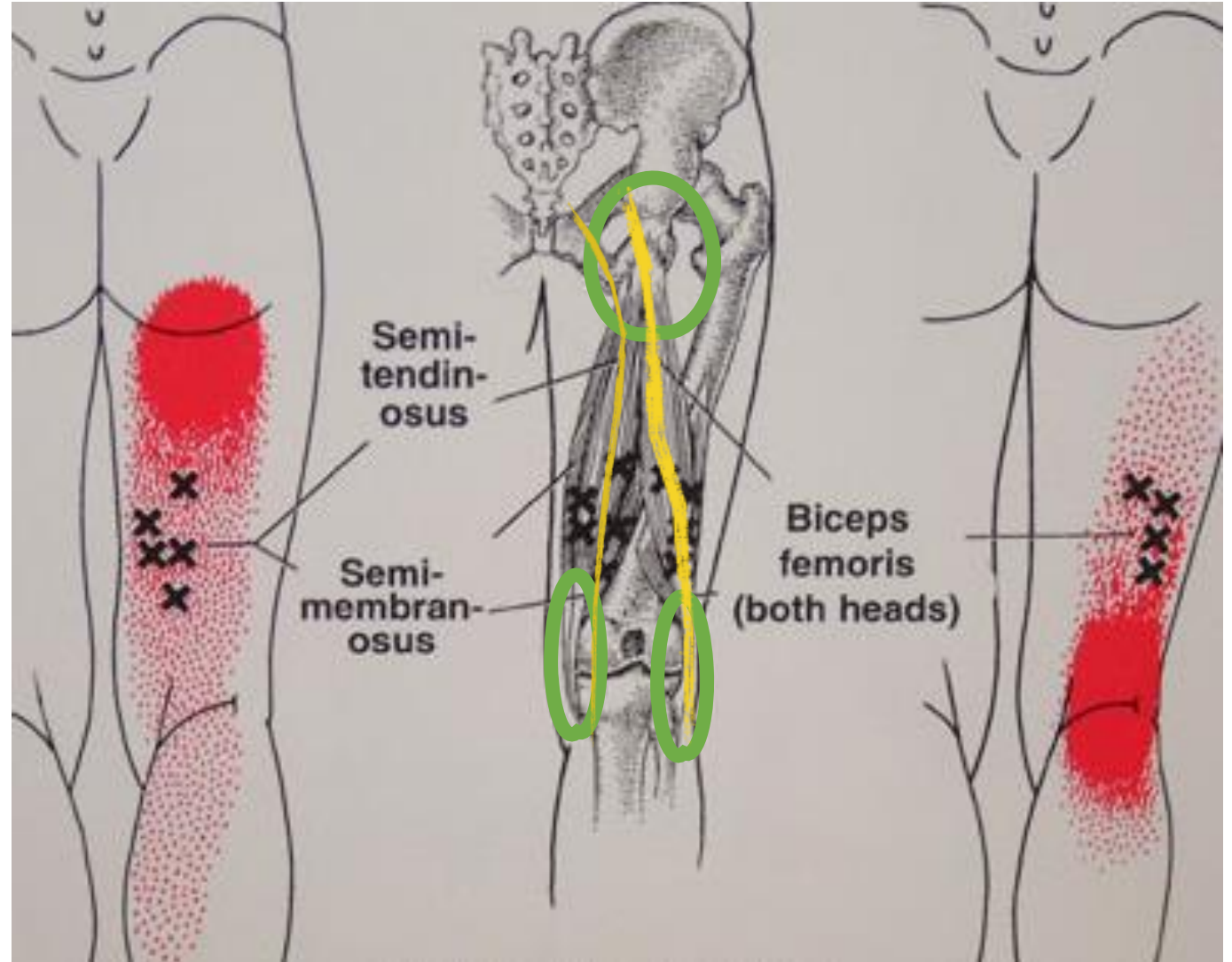
It's the Quads that Give Out

- Because the enthesis can't hold – one end or the other or both





Hamstrings





What about Phantom Limb Pain?

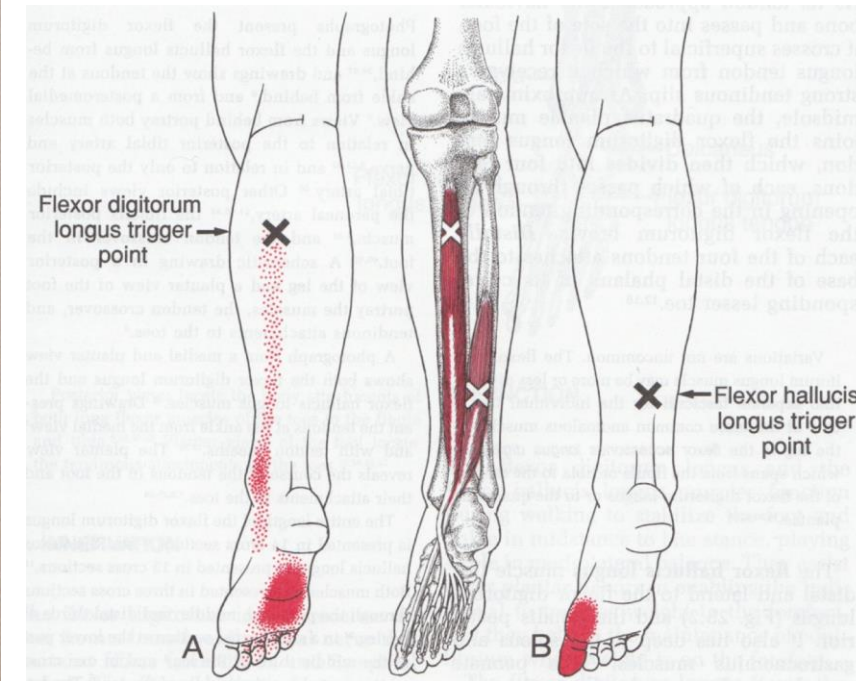
- It is not phantom at all
- It is not central
- It is not a mystery
- It is peripheral
- How do we know?
- Because we can make it change and go away

Tibialis Posterior

Other Flexors

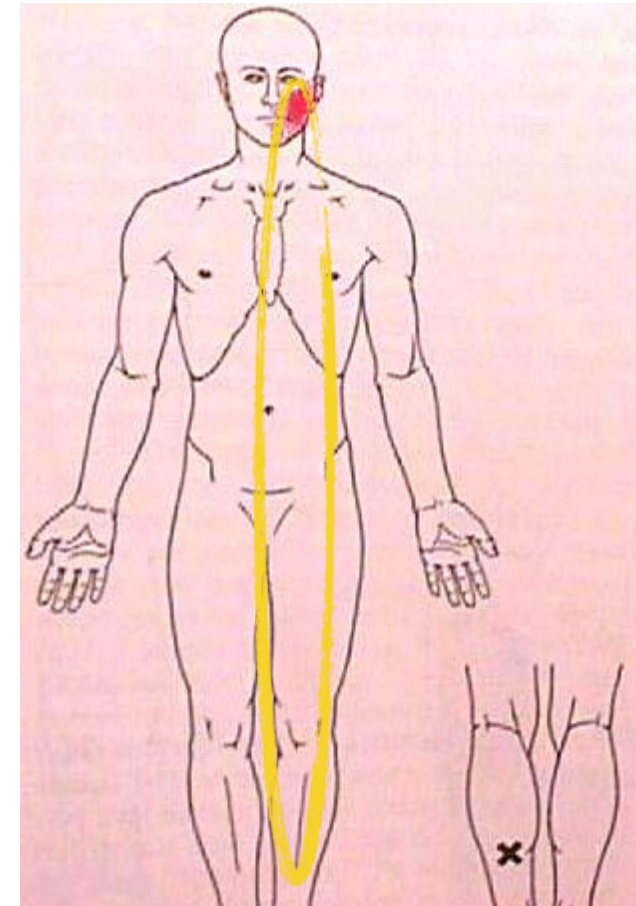
Gastrocs

- All refer pain to the foot
- The foot does not have to be present



The Nervous System that Transmits Myofascial Pain

- Does not know left from right (crosses sides)
- Does not know up from down (calf to low back and face)
- Does not know front to back (abdomen to back)





How do TrPs Cause a Pain Pattern?

- The pain comes from an orchestra of injuries and TrPs all through the body
- How you feel depends on
 - How loudly this orchestra plays
 - Which solo artist stands up to play



Why does pain level vary?

- What you have done in past 3 days to stress fascia
- What the weather is going to do tomorrow (inflammatory food in past 6 weeks and environmental toxicity)
- How well you slept last night
- How much stress you are enduring
- What you have eaten in the past 4 weeks to 4 months¹
 - Wheat, sugar, potato, dairy from cow at the head of the list
 - Artificial sweeteners
 - Hydrogenated fat
 - Fruit juice, banana, water melon

1. Galland L. Diet and inflammation. Nutr Clin Pract, Dec 2010; 25(6); 634-40.



Treatment

Make the knots smaller

Strengthen and Repair the Enthesis as needed

GET THE KINKS OUT!





Fascia Shear Theory .. Blatman

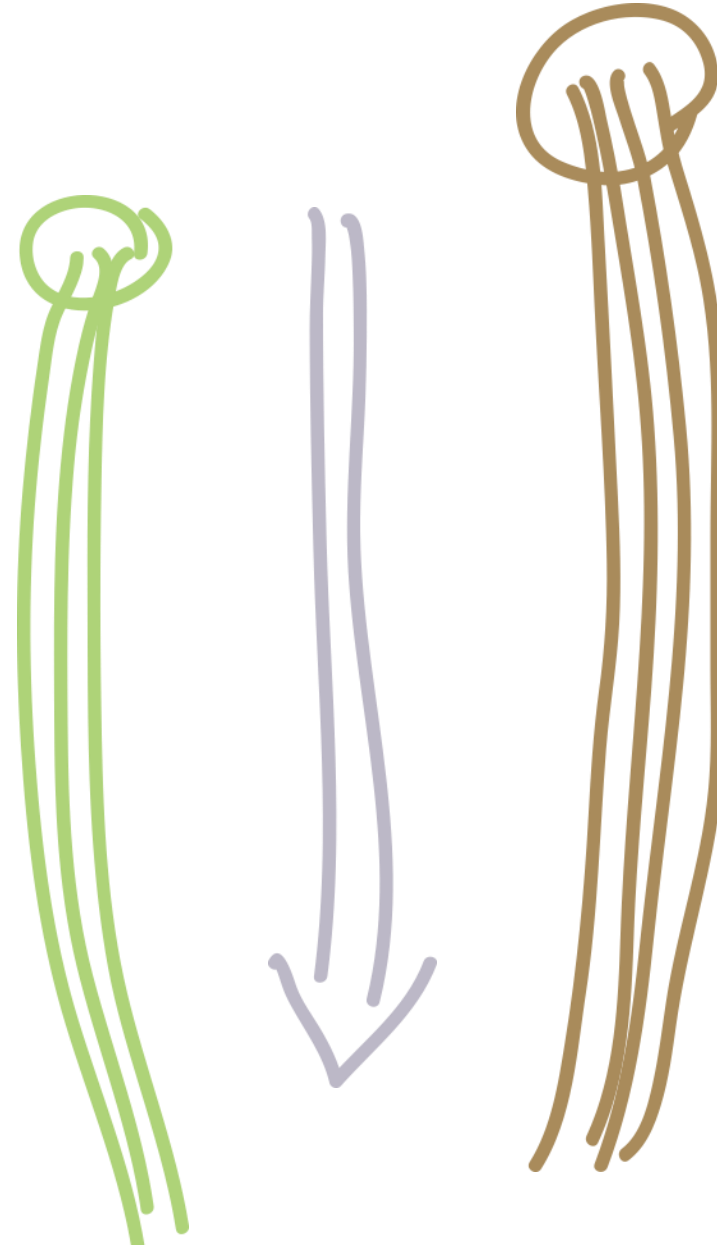
- Trigger point form as kinks in muscle, fascia, ligament, tendon, enthesis
- Trigger points are always part of a ropey band
- Every ropey band has tender attachments which are the primary injury

Fascia shear Theory



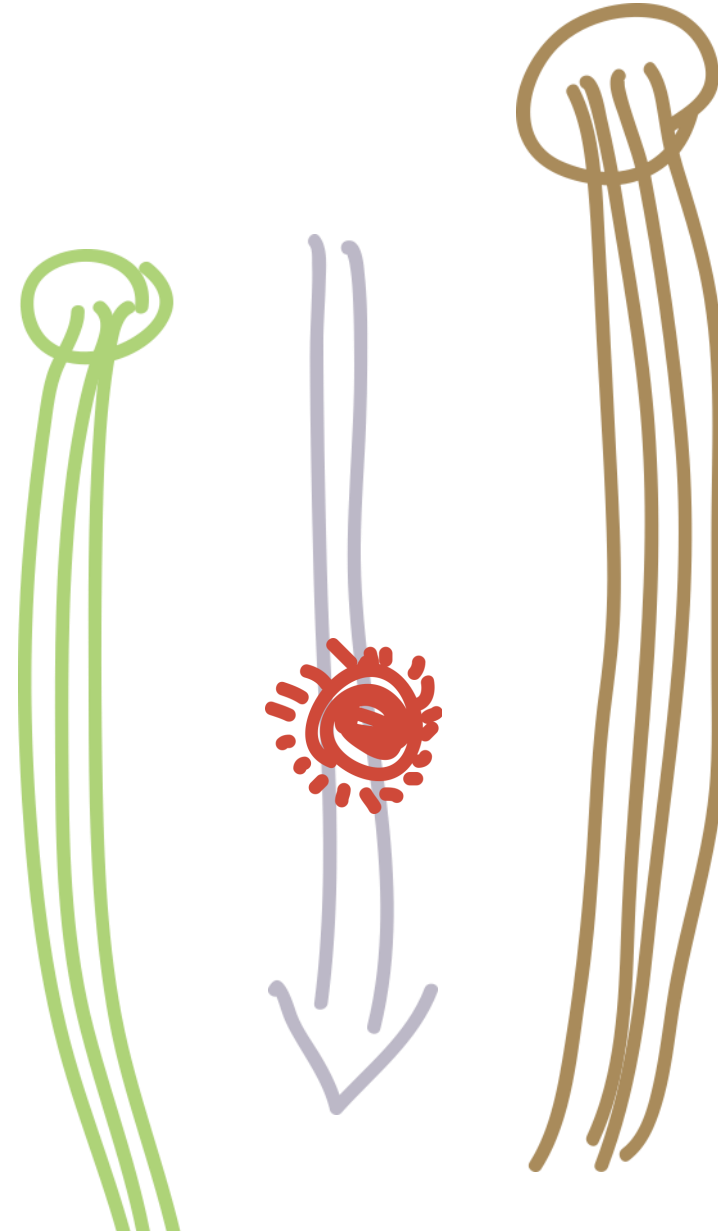


Fascia shear Theory

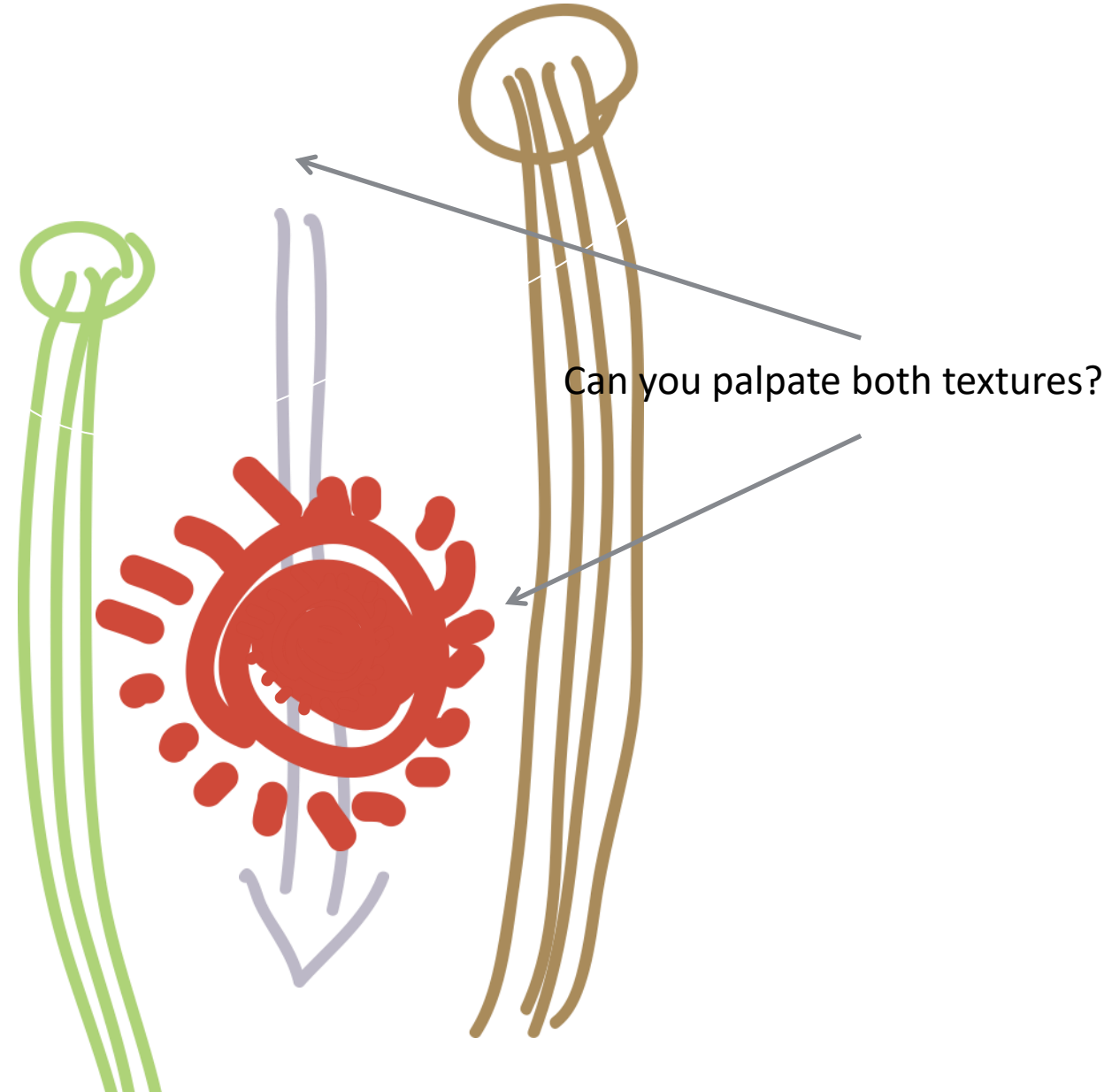




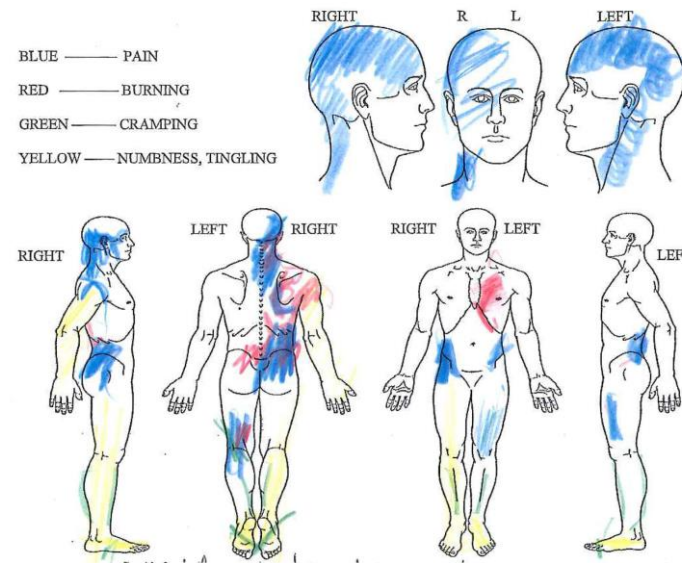
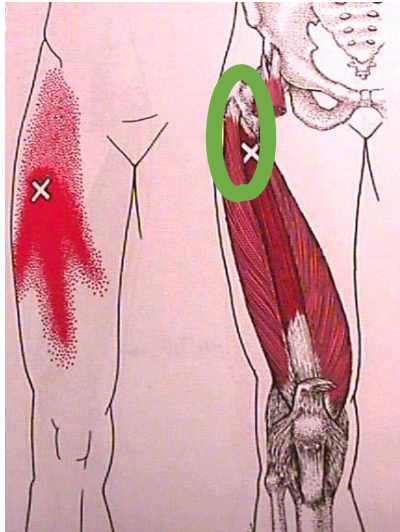
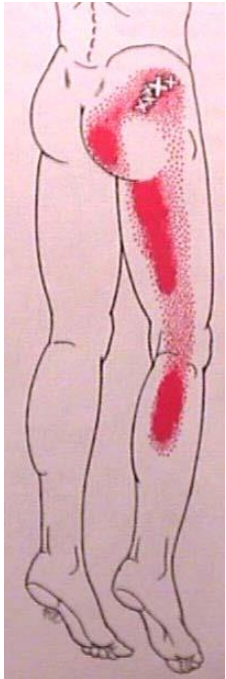
Fascia shear Theory



Fascia Shear Theory



Treatment Results



NAME:

DATE: 10/22/13

Circle the number that best describes your pain at its worst during the last month.

0 1 2 3 4 5 6 7 8 9 10

Circle the number that best describes your pain at its least during the last month.

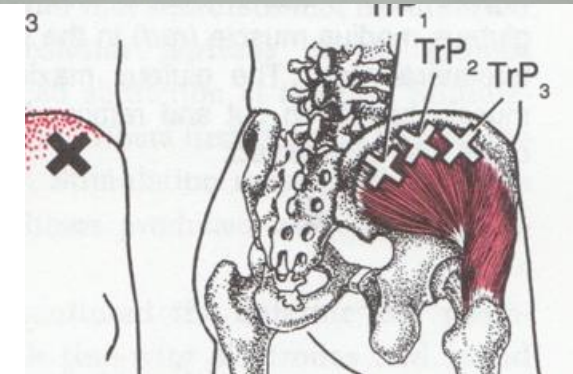
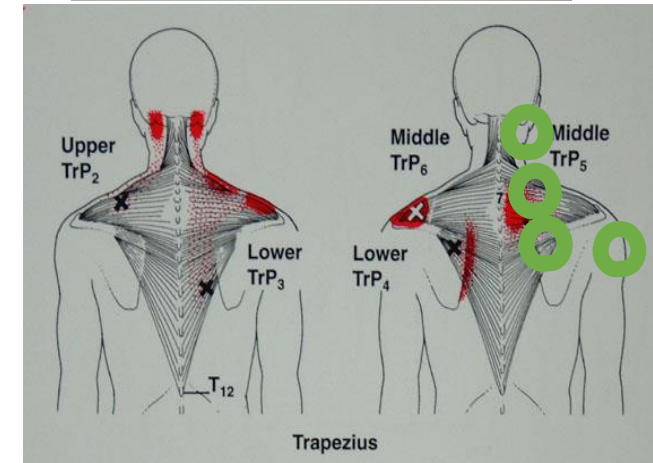
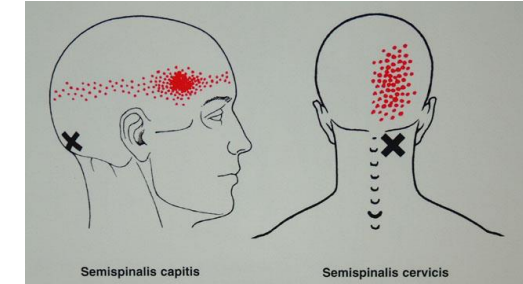
0 1 2 3 4 5 6 7 8 9 10

Circle the number that best describes your pain on average during the last month.

0 1 2 3 4 5 6 7 8 9 10

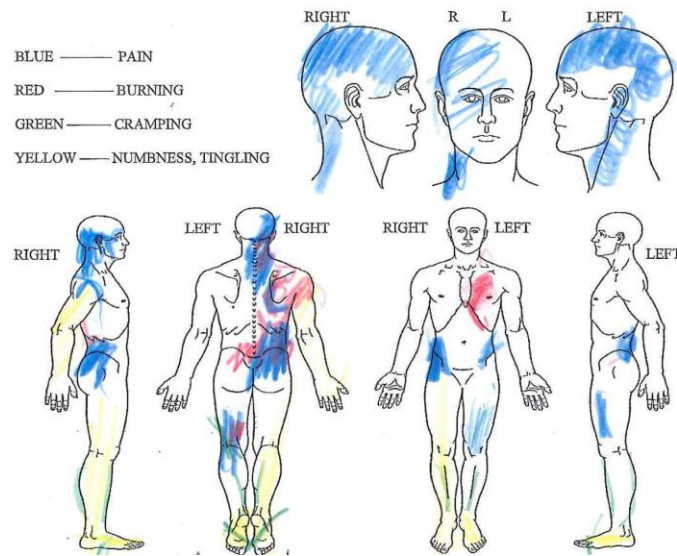
Circle the number that best describes your pain as it is right now.

0 1 2 3 4 5 6 7 8 9 10

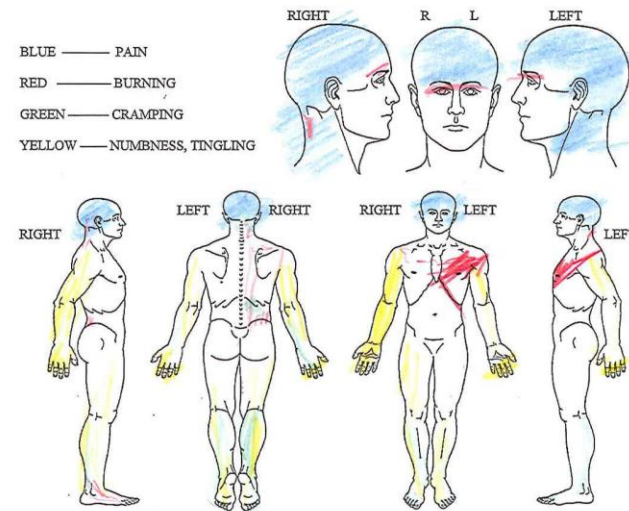




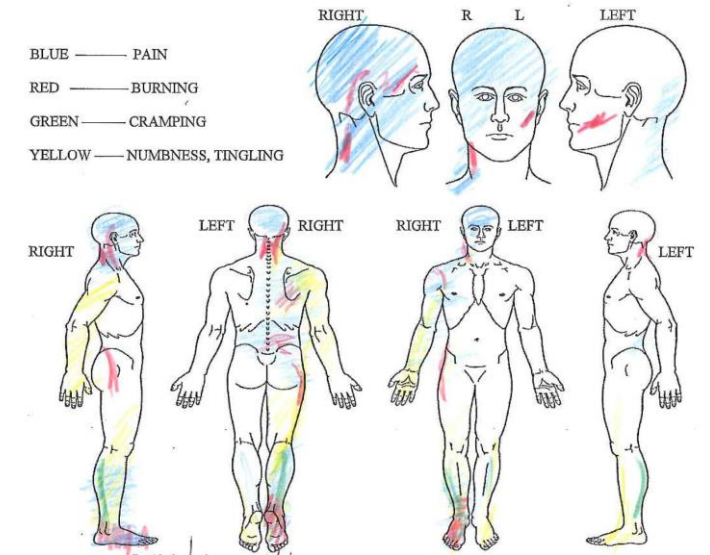
Trigger Point Injections and PRP



10-22-13

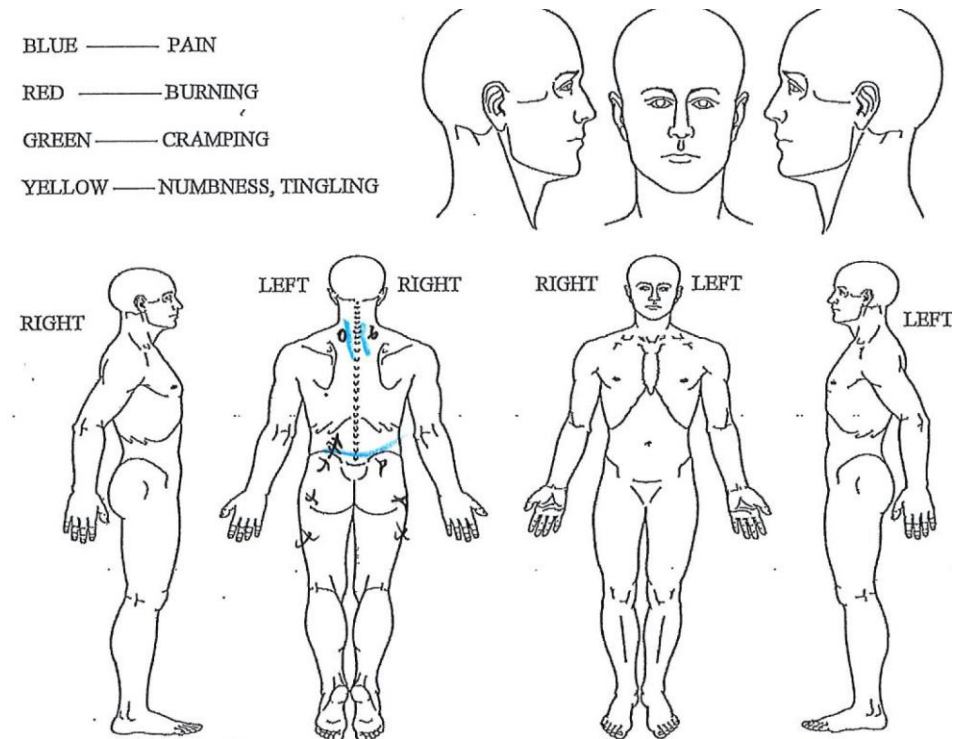
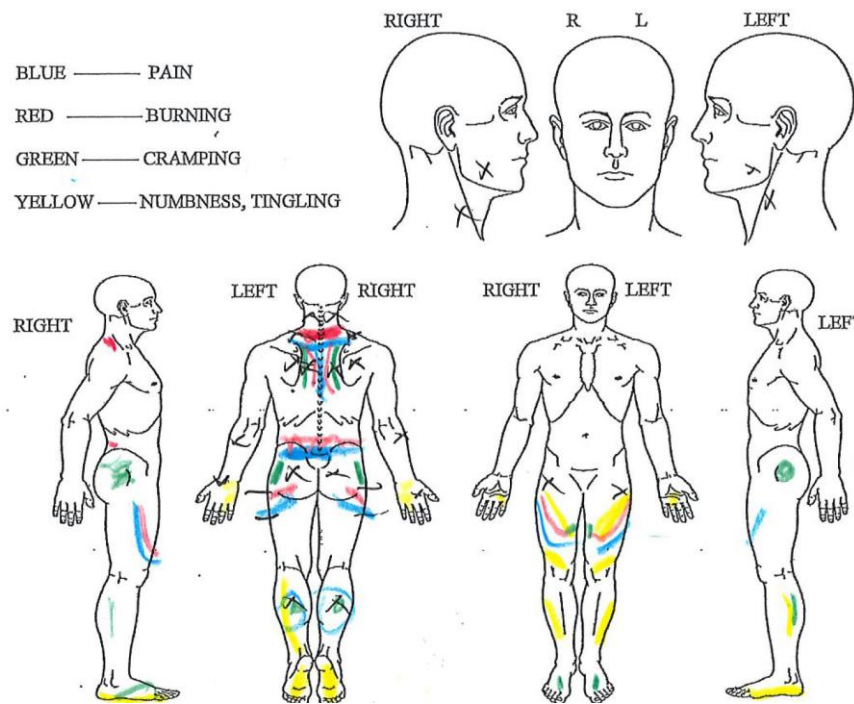


12-17-13



11-19-13

Trigger Point Injections and PRP

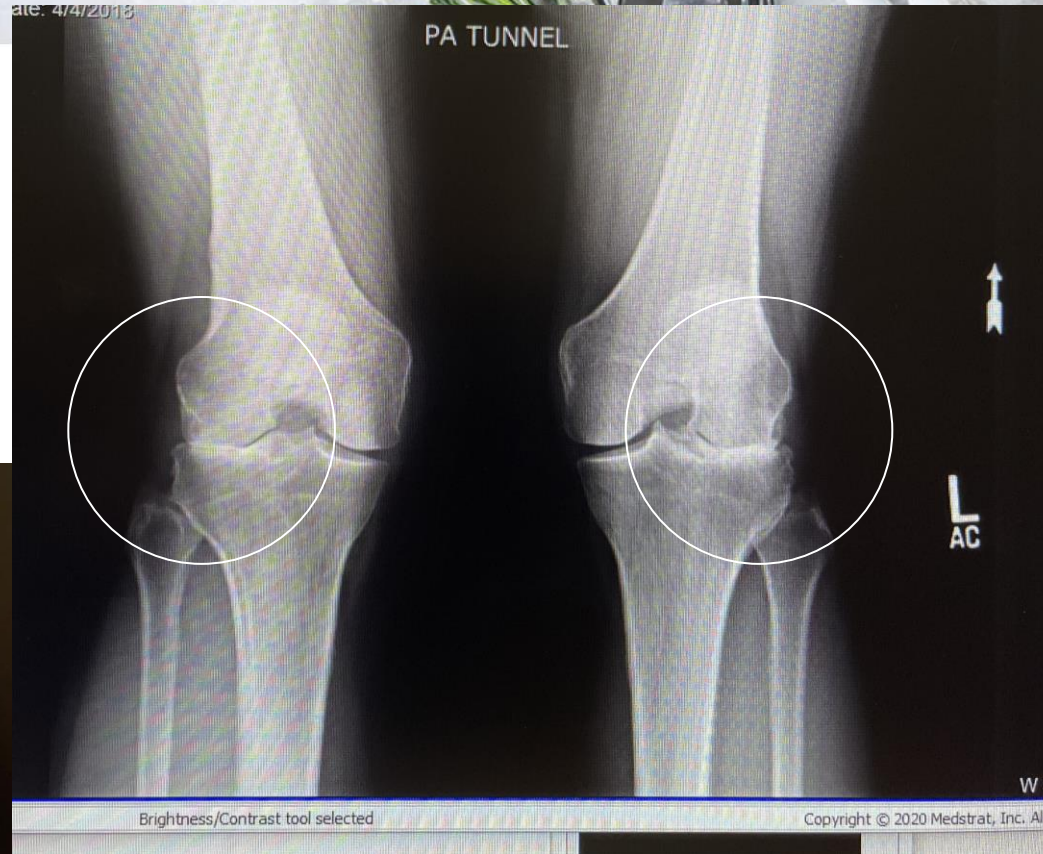


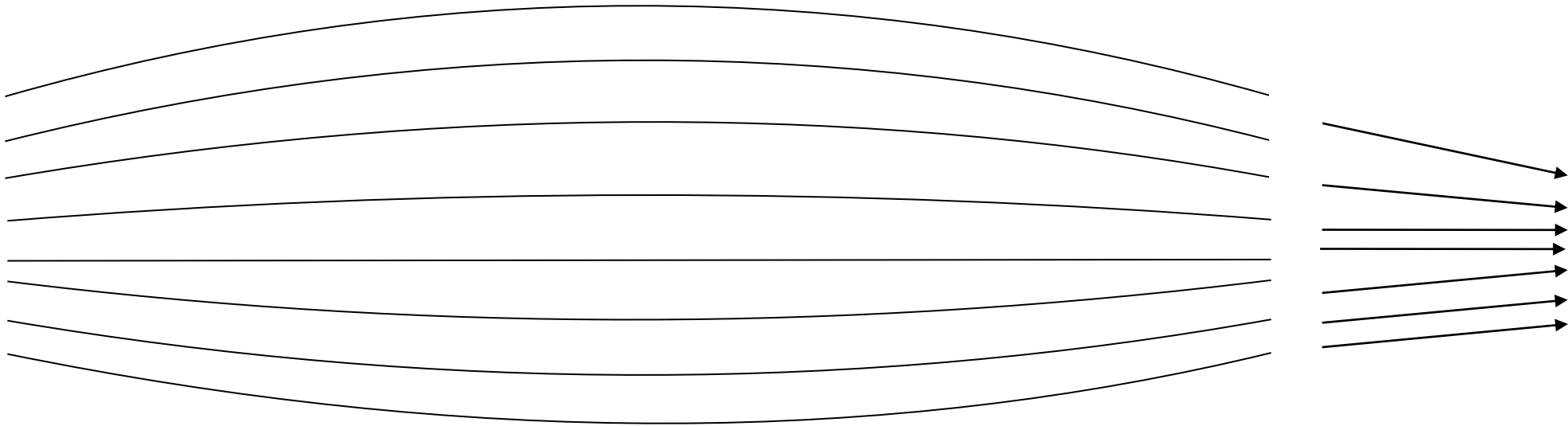


Our Brain Can Grow/Restore Cartilage in Worn Joints

- IF you can straighten your knee and bend 100 degrees, you cannot possibly be 'Bone-on-Bone'
- We grow intestinal lining every 3 days
- We grow new skin
- We grow brain cells
- We grow bone
- Does it make any sense that we don't grow cartilage to repair from daily wear and tear?

Restore Joint Cartilage

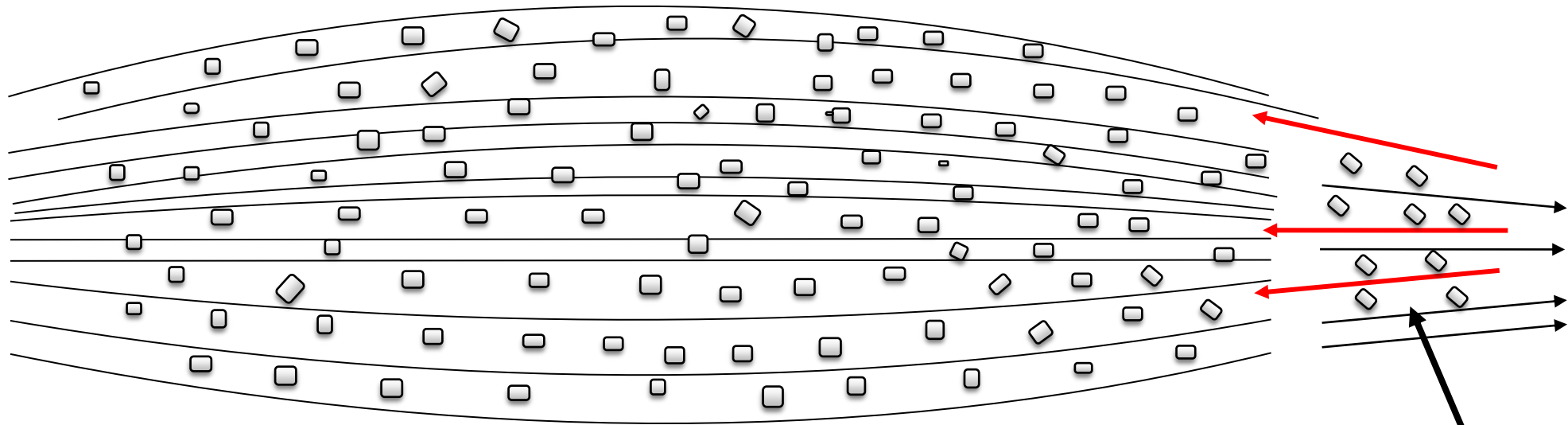




Fascia Weave of Enthesis

Muscle Fibers

Contraction



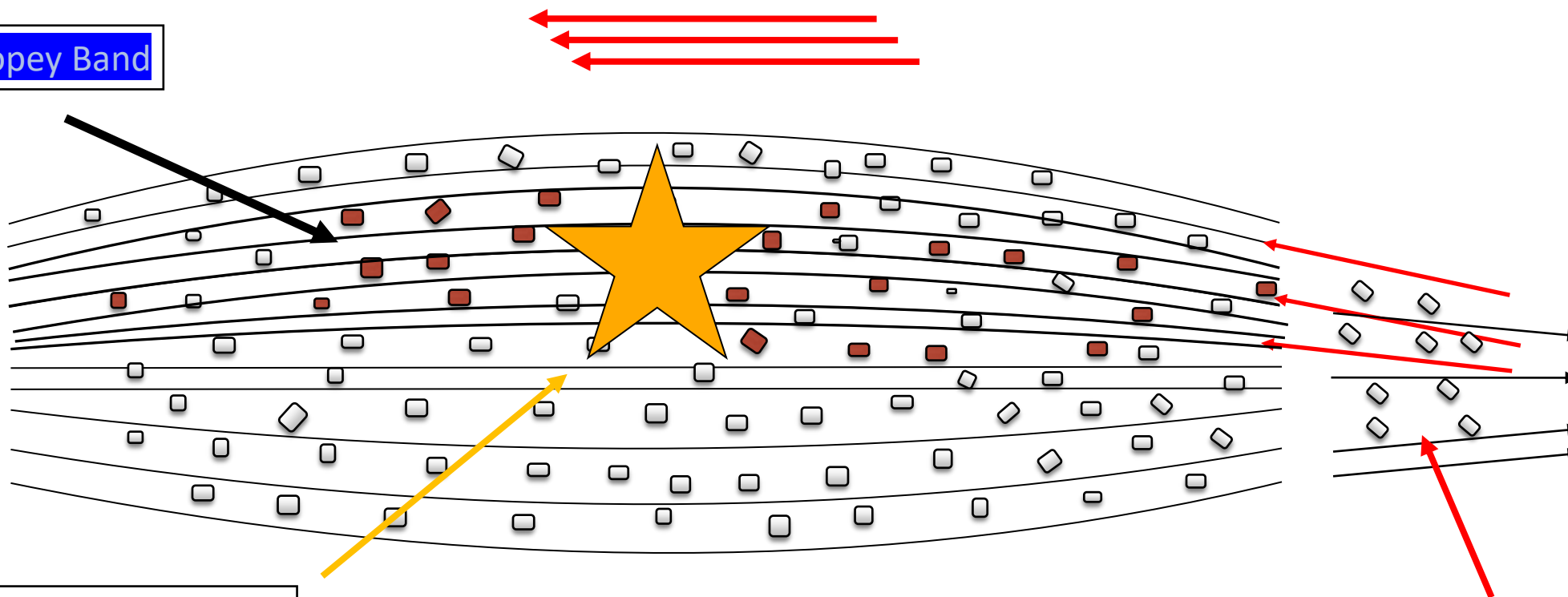
Muscle Fibers

Fascia Slip with Muscle
Contraction



Contraction

Becomes Ropey Band



Trigger Point Knot

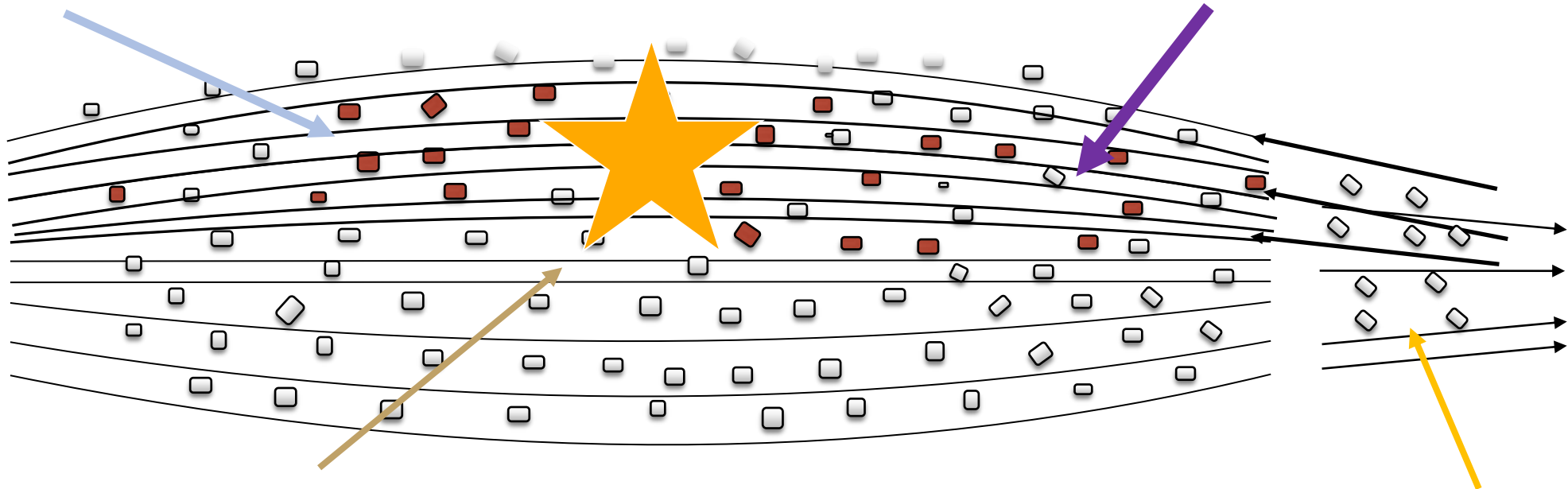
Muscle Fibers

Fascia Slip with Muscle
Contraction

Contraction

Anaerobic Metabolism
Lactic Acid
Inflammatory Mediators
PAIN!! Radiates Along Fascia Lines

Becomes Ropey Band



Trigger Point Knot

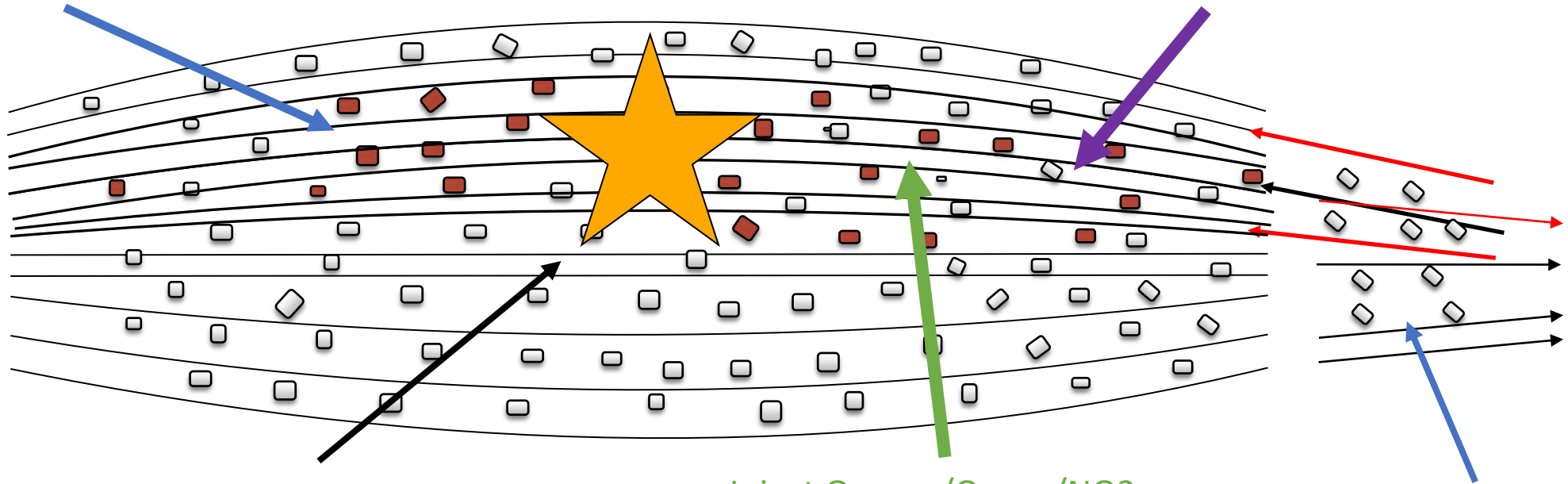
Fascia Slip with Muscle
Contraction

Muscle Fibers

Contraction

Anaerobic Metabolism
Lactic Acid
Inflammatory Mediators
PAIN!! Radiates Along Fascia Lines

Becomes Ropey Band



Trigger Point Knot

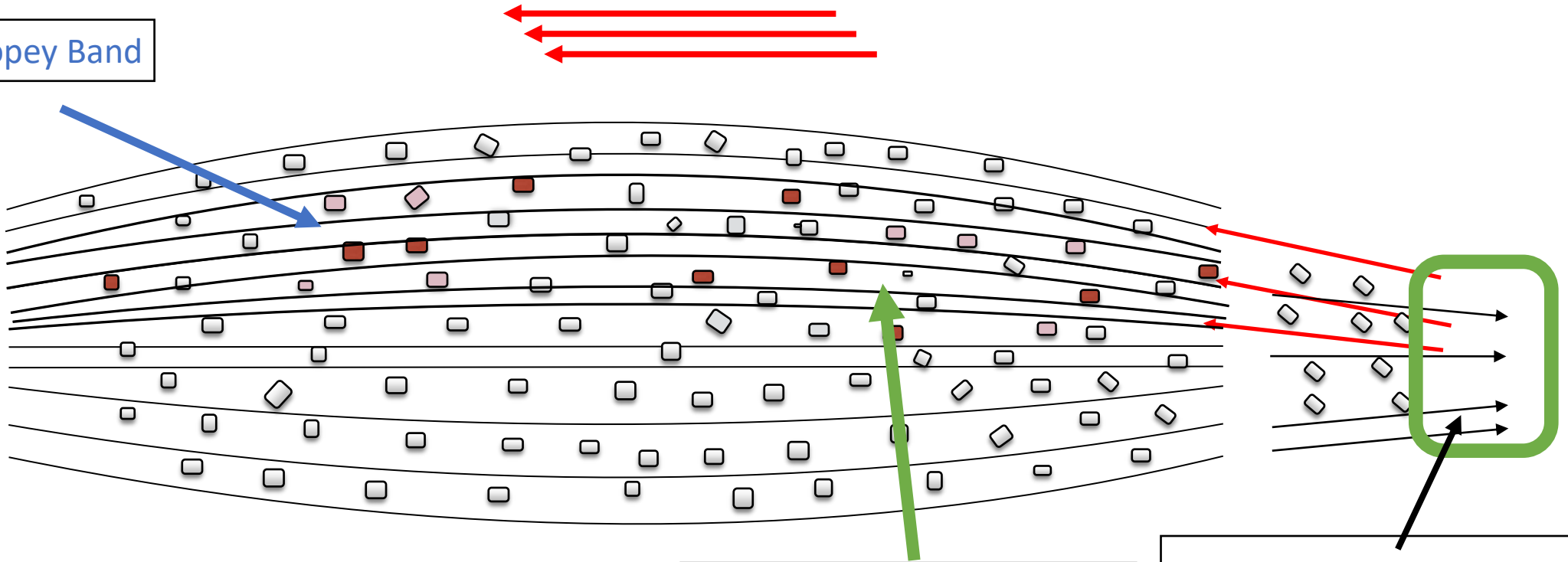
Muscle Fibers

Inject Oxygen/Ozone/NO2
Separate Stuck Muscle Fibers
Allow Blood Flow
Detoxification
Muscle Restoration
Pain Relief

Fascia Slip with Muscle
Contraction

Contraction

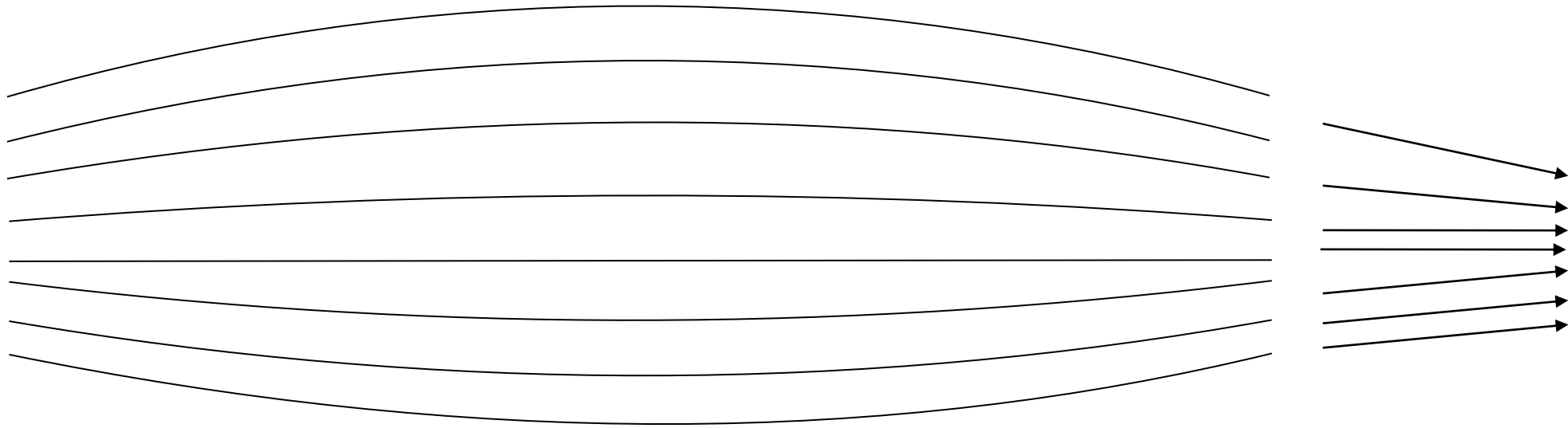
Becomes Ropey Band



Muscle Fibers

Inject Oxygen/Ozone
Separate Stuck Muscle Fibers
Allow Blood Flow
Detoxification
Muscle Restoration
Pain Relief

Fascia Slip Stopped
Platelet-rich Plasma Injection



Muscle Fibers

Fascia Weave of Enthesis Repairs

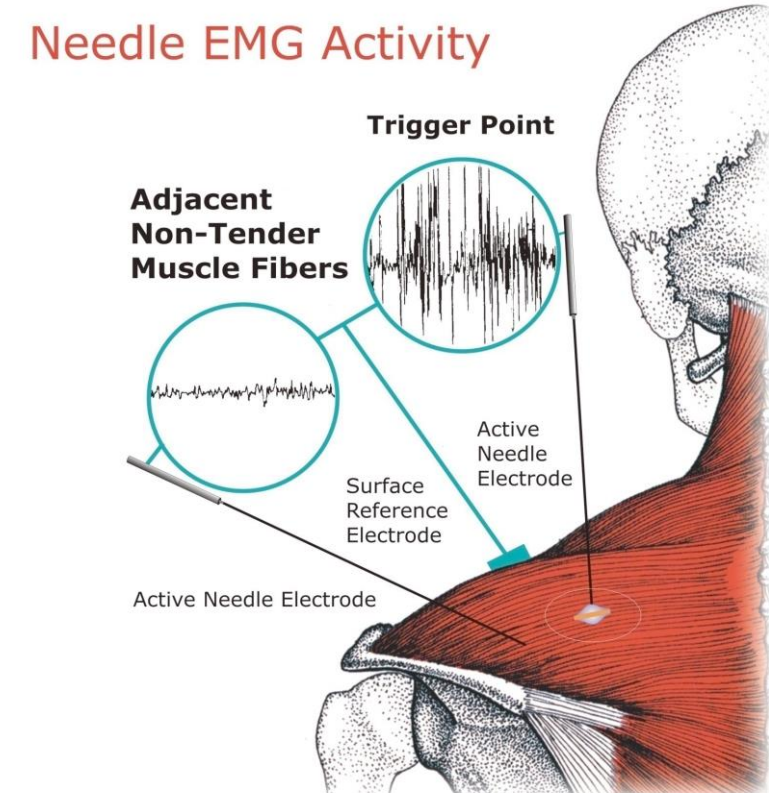
Muscle Fibers and Fascia Recover
Pain Stops

Relationship of: Fascia – Pain and Stress

- Mental
- Emotional
- Physical
- Trauma

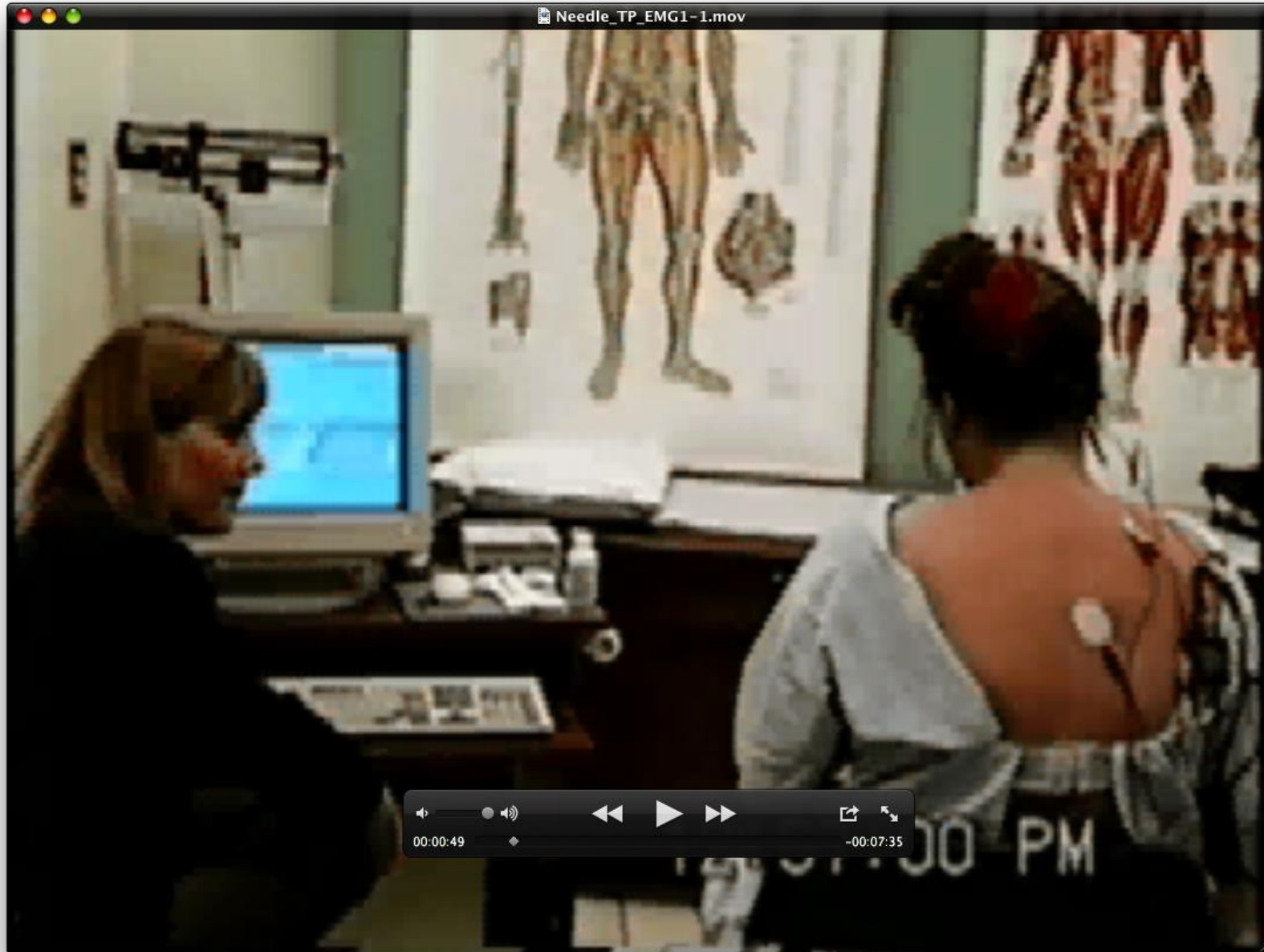
Sympathetic Nervous System And Myofascial Pain

- Work done by Hubbard/Gevirtz
- Needle transducers in shoulder trapezius muscle
 - One in trigger point, one not
- Relationship with *stress*

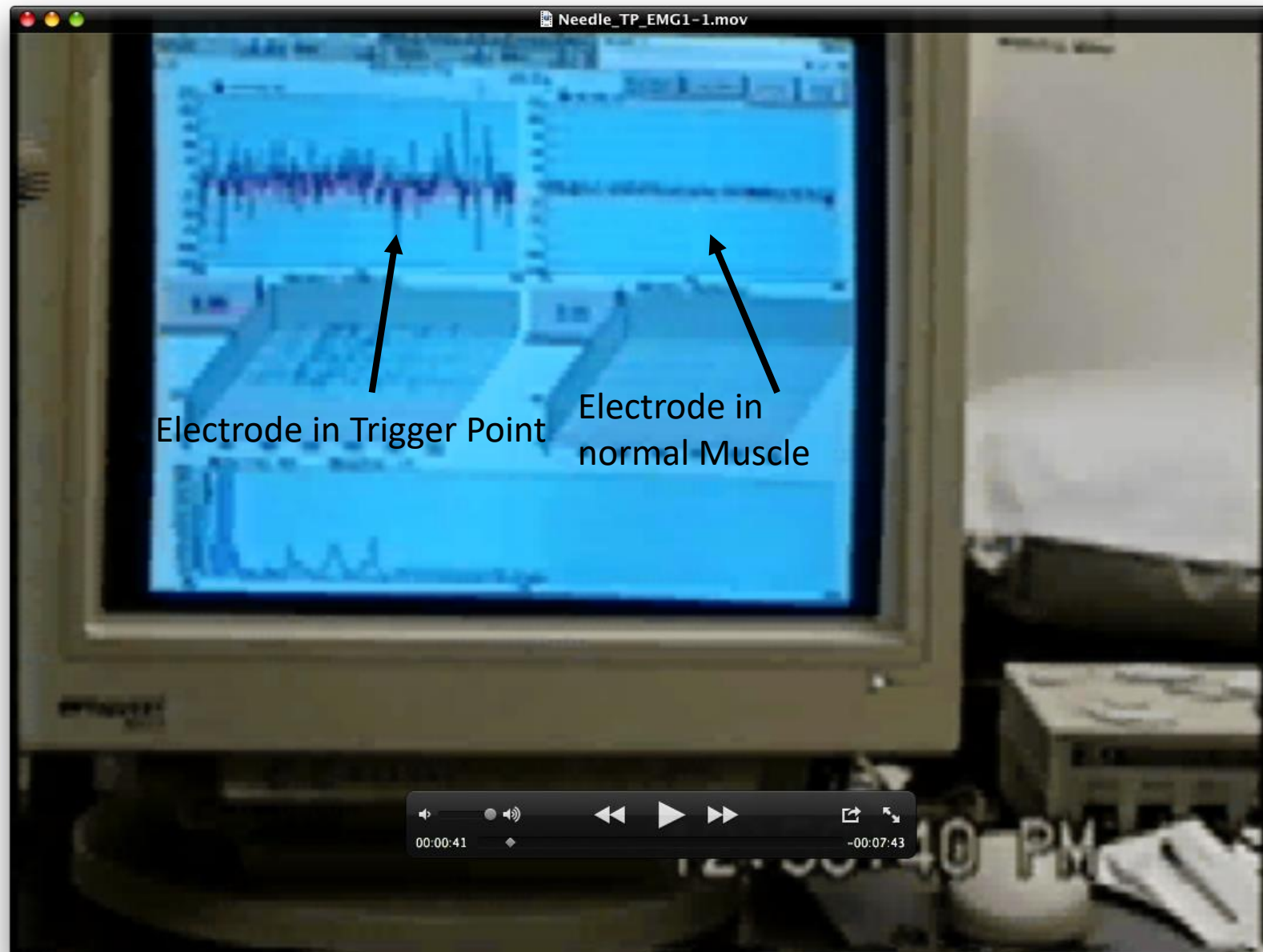


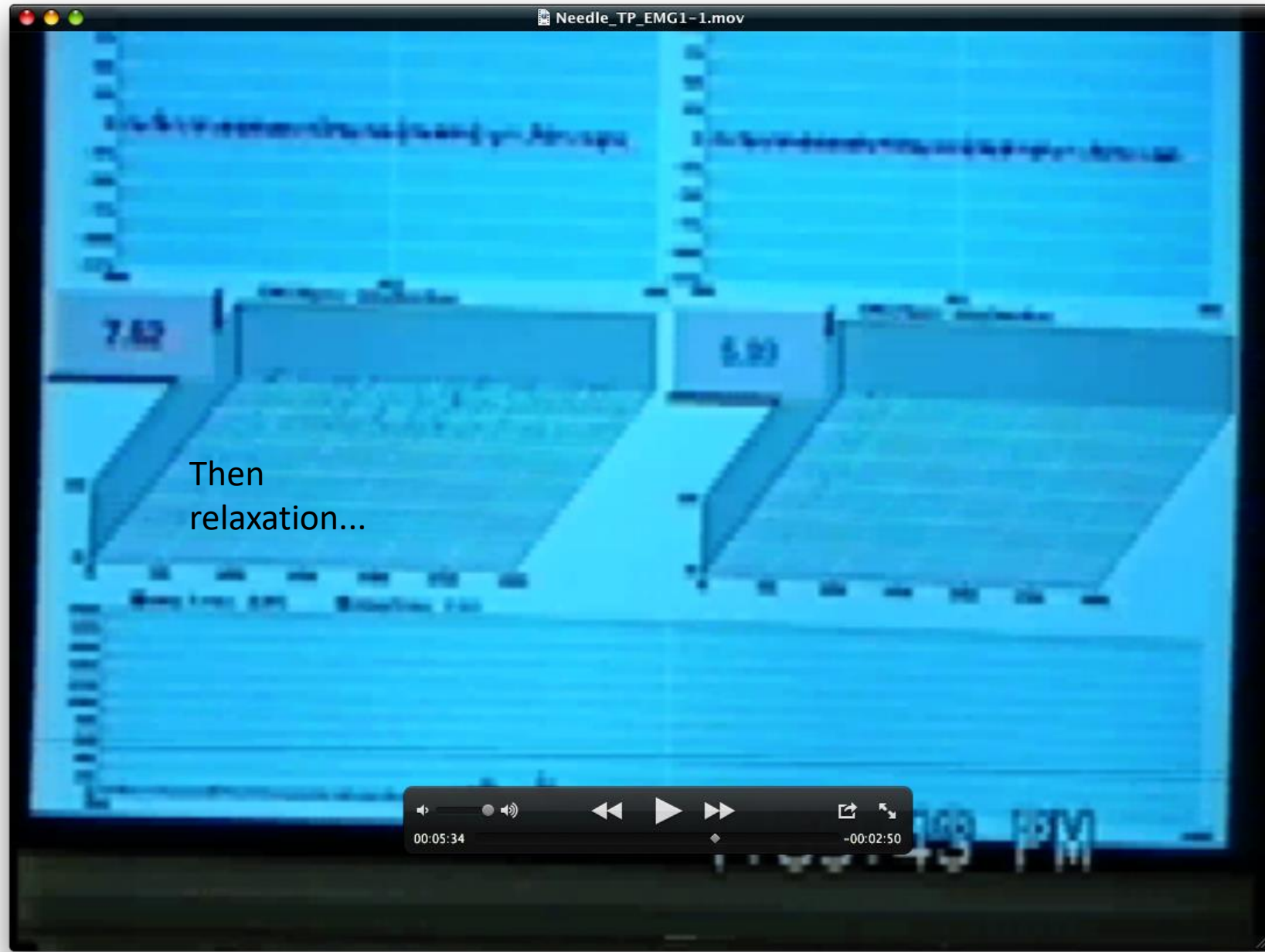


Researcher

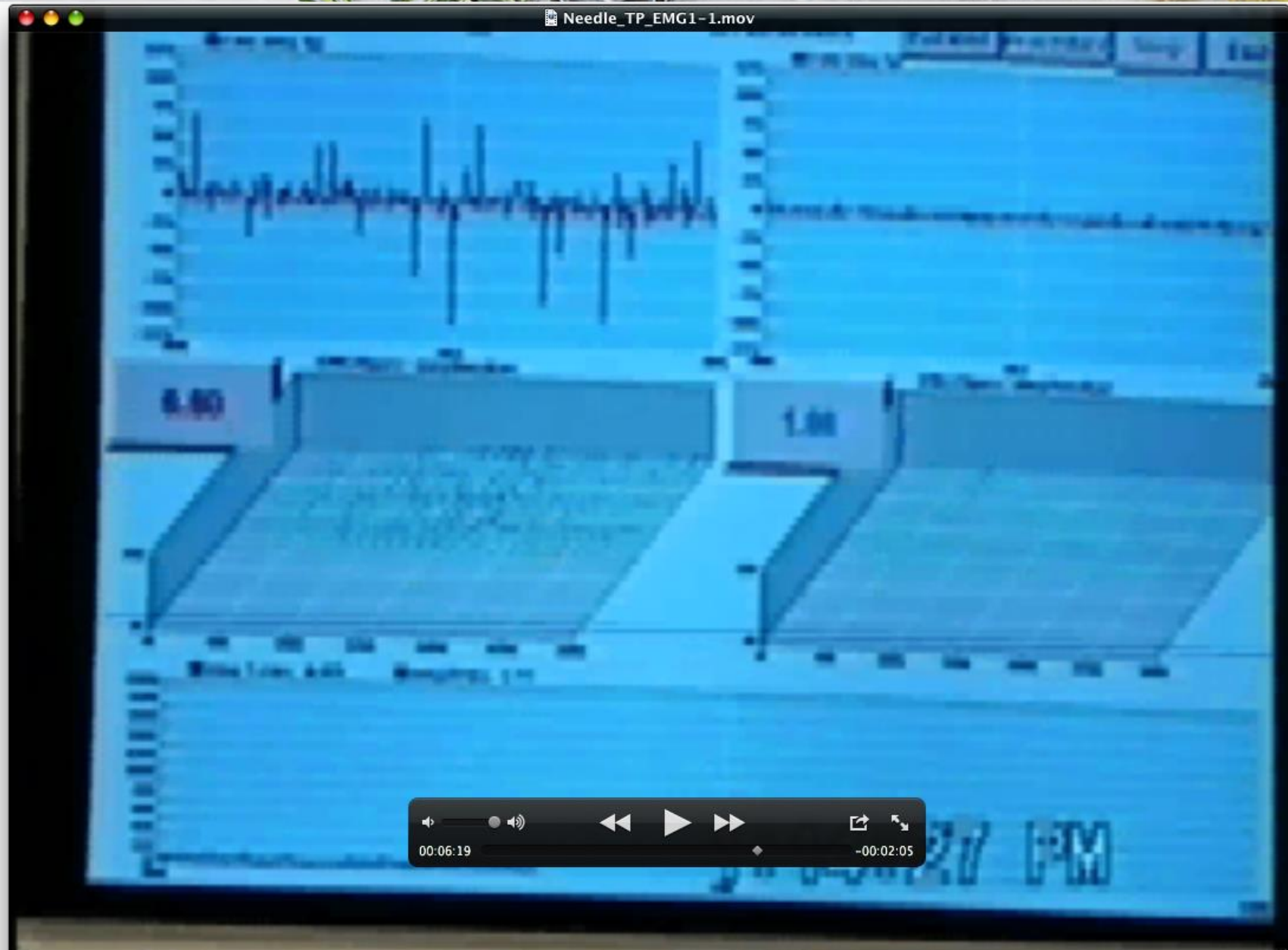


Subject



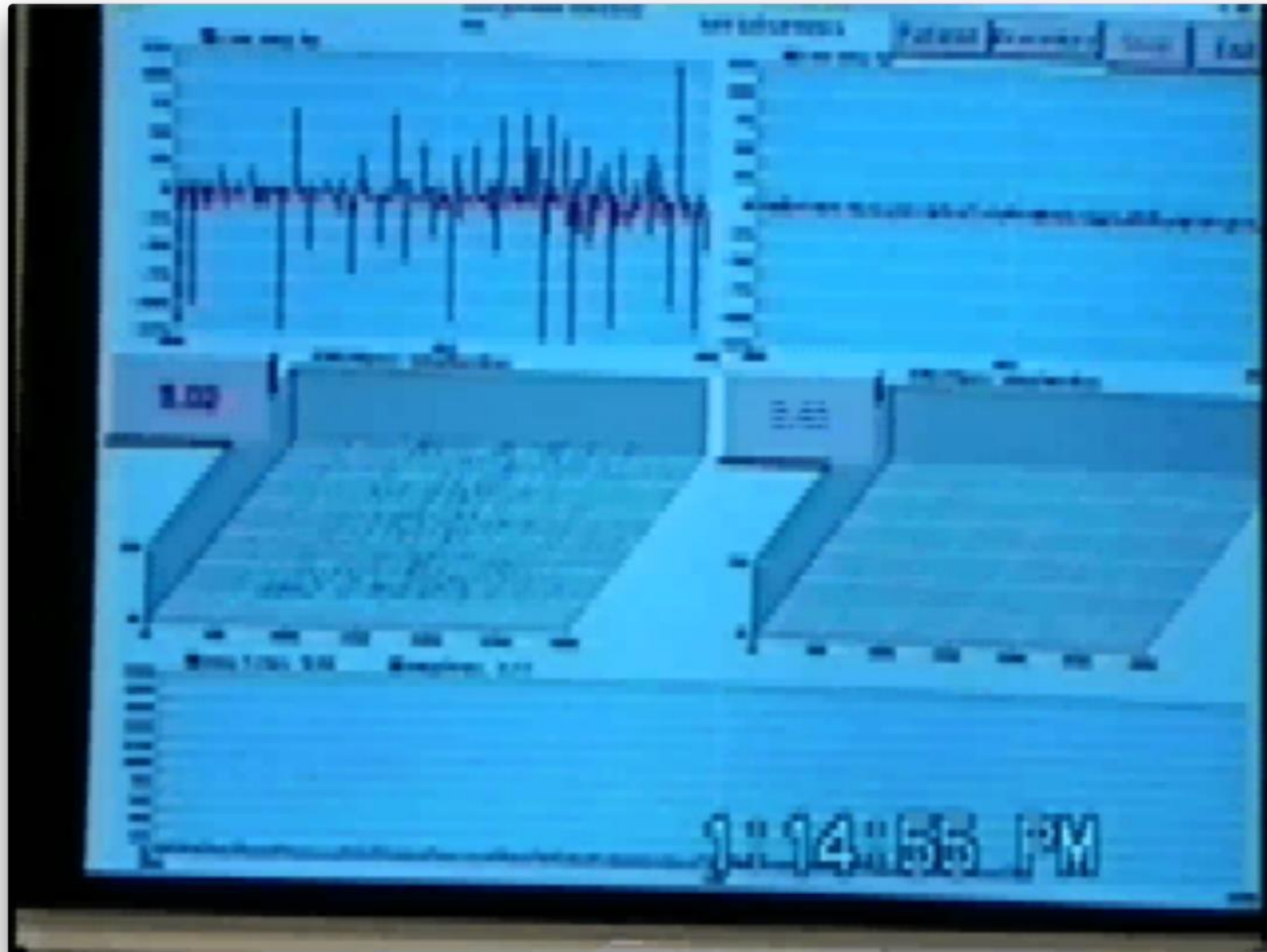


Then STRESS...
Counting backwards by 7
From 900



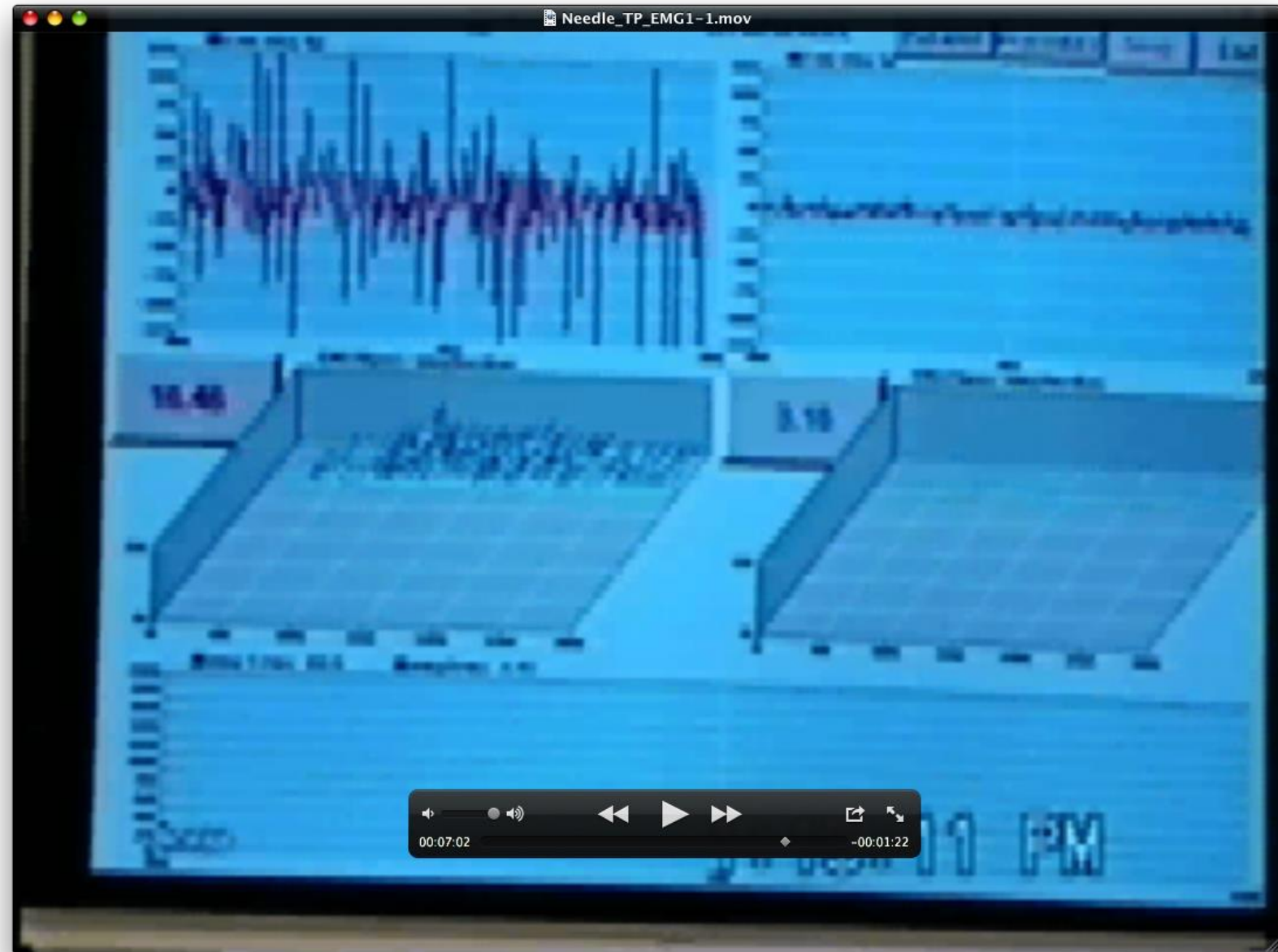


Progressive STRESS....



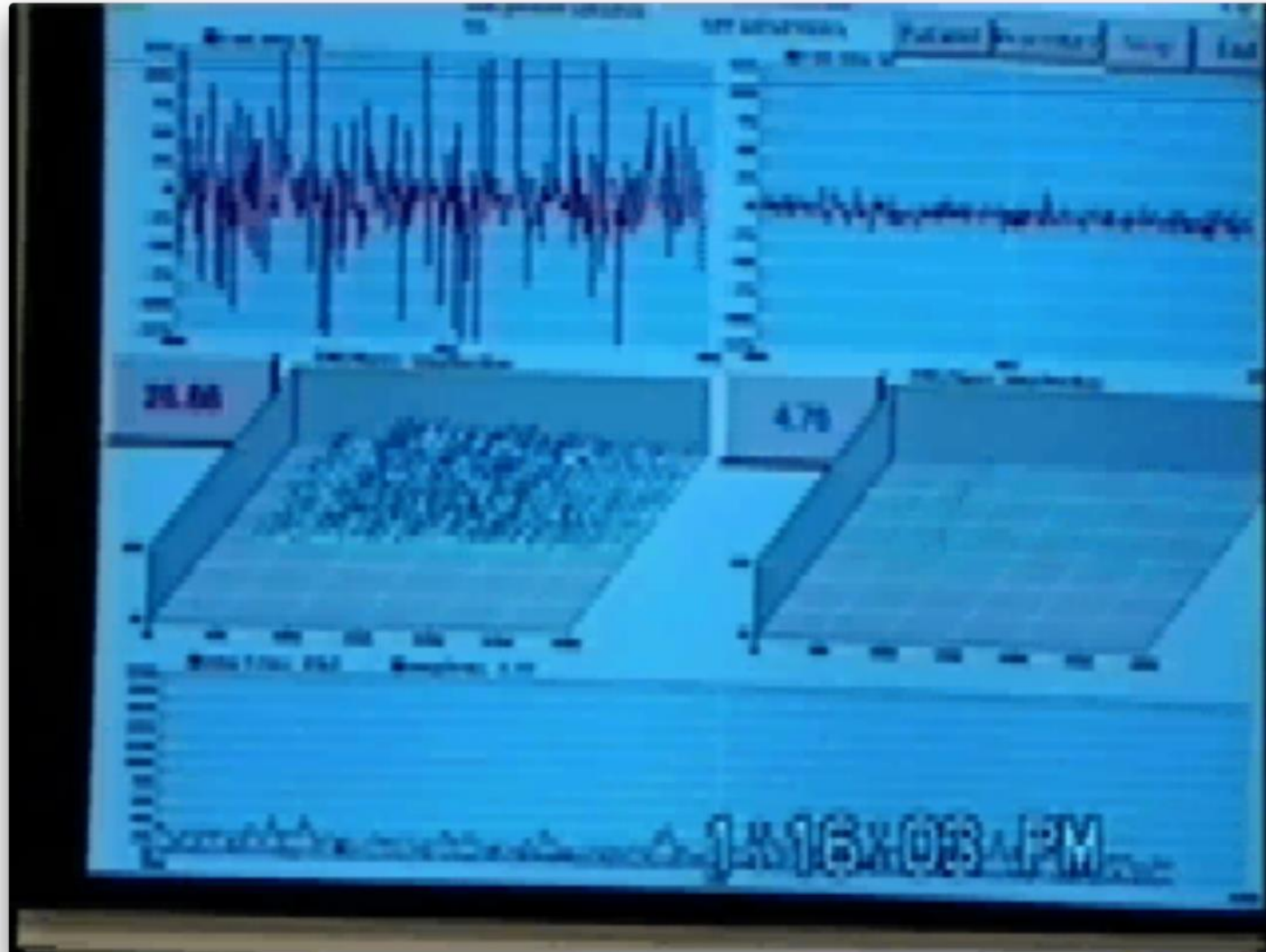


Progressive STRESS....





Progressive
STRESS....



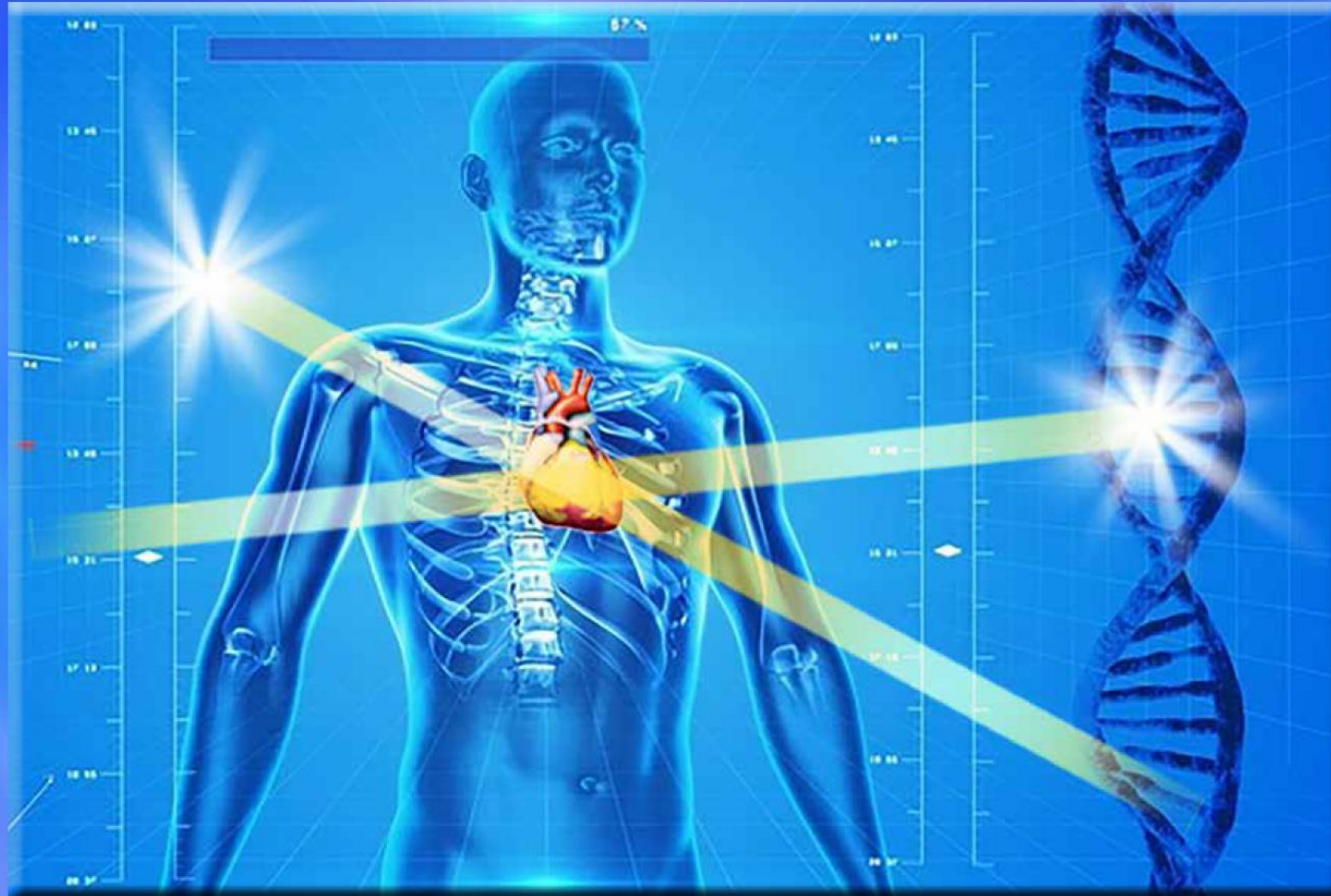


With more Stress

- Sympathetic nervous system effects increase
- Trigger point activity increases
- Orchestra of pain generators plays louder .. All over the body
 - Muscle tension, headache, back pain, etc



Laser Guided Stem Cells for Regeneration of Heart Tissue



Pre-activated cells were infused IV. Then the laser guidance beam was directed to the anterior followed by the lateral heart projection for 5 minutes each

Clinical Study

- End stage candidates for heart transplant or ventricular assisted device (n=10)
- 50% ave increase in heart function
- 50% of patients improved off the transplant list
- 20% improved to near normal with a single treatment

Intravenous SONG-modulated laser-activated allogeneic cord blood mesenchymal stem cells for the treatment of end-stage heart failure: a preliminary clinical study

T. Ovokaitys¹, A. Paronyan², H. Haryapetyan³, P. Hollands⁴

¹CEO, Qigenix, Carlsbad, CA, USA

²Cardiologist, Erebouni Medical Center, Yerevan, Armenia

³Head of Erebouni Cardiology Center, Yerevan, Armenia

⁴CTO, Qigenix, Carlsbad, CA, USA

Corresponding Author: Todd Ovokaitys, MD; e-mail: drtodd@gematria.com

Keywords: Cord blood, Heart failure, Mesenchymal stem cells, MSCs, SONG-modulated laser.

INTRODUCTION

According to the World Health Organization (WHO), end-stage heart failure (HF) results in approximately 17.9 million deaths per year¹. In the UK alone in 2004 coronary heart disease cost the health service £29.1 billion². The only currently known curative treatment option for these patients is Orthotopic Heart Transplant (OHT) and many of these patients often have to resort to relying on a Left Ventricular Assistance Device (LVAD) whilst awaiting transplant. Many patients with HF die before a suitable heart donor becomes available³ with the expected 1-year survival rate of patients with severe HF agreed to be 30%⁴.

The effect of SONG-modulated laser light on stem cells has been studied previously with confirmation that the SONG-modulated laser light interacts with human Very Small Embryonic Like (hVSEL) stem cells in Platelet Rich Plasma (PRP) to induce proliferation⁵. A theoretical model for the mode of action of SONG-modulated hVSEL stem cells has been proposed utilising theory from quantum physics⁶. The hVSEL stem cells are pluripotent and therefore have considerable potential in the regeneration of damaged organs even before any intervention using SONG-modulated laser light⁷. The small size (1-4 µm in diameter) of hVSEL stem cells gives them the added advantage that they can cross the blood-brain barrier and do not become trapped in the various capillary beds when administered intravenously.

MSCs are known to be multipotent stem cells and therefore are thought to have considerable potential in regenerative medicine⁸. The use of MSCs in the treat-

Abstract

Objective: This preliminary clinical study assessed the potential use of Strachan-Ovokaitys Node Generator (SONG)-modulated laser-treated expanded (3-5 passages) cord blood Mesenchymal Stem Cells (MSCs) in the treatment of end-stage heart failure.


Patients and Methods: Ten patients were enrolled into the study, each with a Left Ventricular Ejection Fraction (LVEF) of $\geq 20\%$ and $\leq 25\%$. Allogeneic expanded cord blood MSCs were treated with a SONG-modulated laser prior to intravenous infusion at a total dose of 100×10^6 MSCs per patient. All patients also received 5 minutes of SONG-modulated laser light to the anterior precordial region and 5 minutes to the left lateral chest. The LVEF of each patient was assessed using echocardiography on Days 3, 7, 31, 62 and 93 post-treatment.

Results: All patients showed an increase in LVEF following SONG-modulated laser-treated expanded MSC treatment and remained with increased LVEF for at least 3 months. Two patients in the study subsequently died of heart failure.

Conclusions: This is the first description of the use of SONG-modulated laser-treated cord blood MSCs in the treatment of end-stage heart failure and it sets the groundwork for future double-blind randomised controlled clinical trials.







Moderately severe Parkinson's
Baseline and 10 weeks after 1st treatment;
1 day after second:













30 min after 1st
treatment



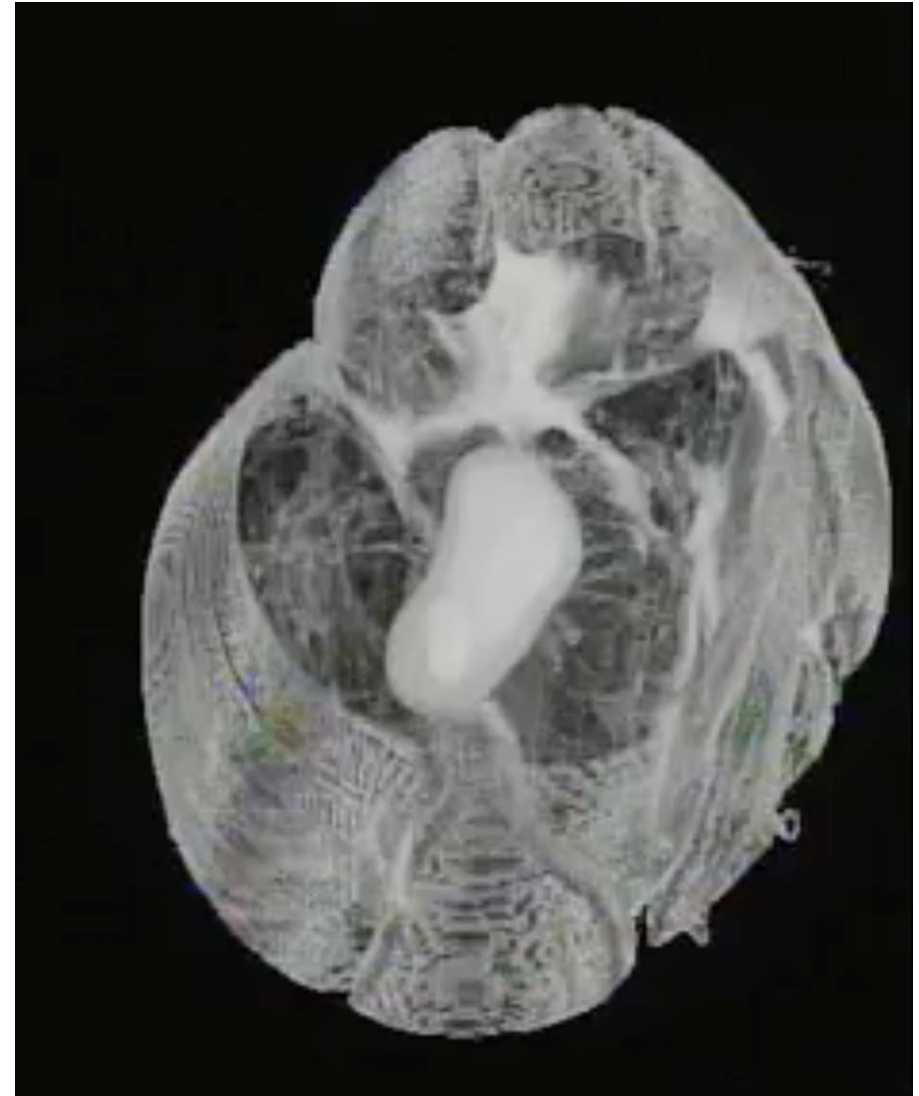


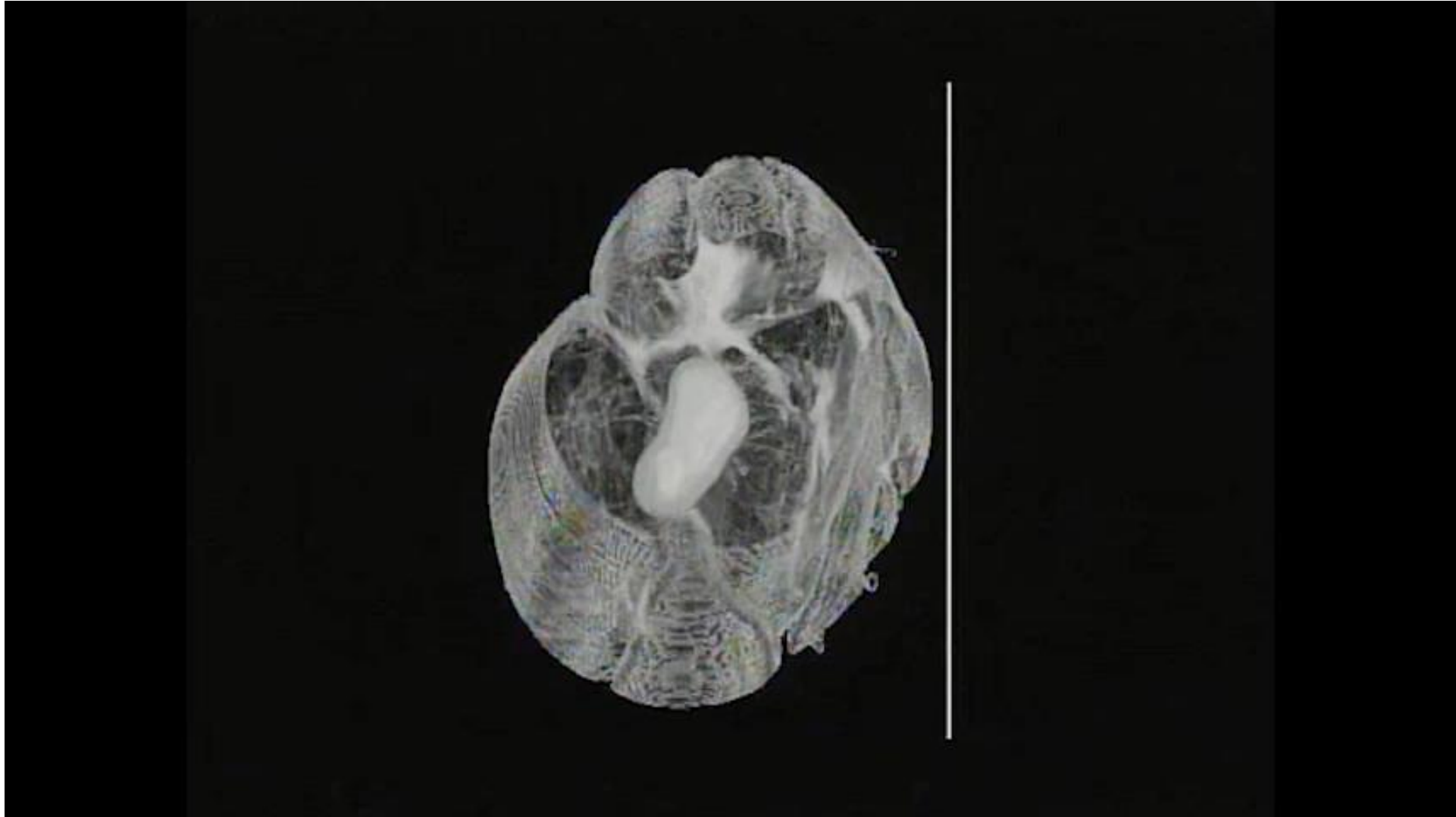
VSELs

- Very Small Embryonic Like Stem Cells
- Can use for fascia repair, more powerful than PRP and MSCs
- Small enough to go through lung and blood-brain barrier
- And can be laser-guided for MS, Parkinson's, CTE, heart failure, and more.



- 3-D schematic of fascia of human thigh
- Breathe, relax, imagine....
- The reality of how we all work together is starting to have sharper focus....







Thank You



Friday 1:30pm – 2:30pm

Fascia – How to Understand Pain and How to Treat It

Please scan this QR code on you mobile
or tablet device to access the session feedback survey



Fascia â How to Understand Pain and H
ow to Treat It