



**PERTEMUAN ILMIAH REGIONAL
PERDOSSI JOGLOSEMARMAS ke -29**

In conjunction with
Sunshine
Solid Sports & Physiology
2017



Certificate

THIS IS TO CERTIFY THAT

dr. I Putu Eka Widyadharma, M.Sc, Sp.S

HAS PARTICIPATED AS

Speaker

WORKSHOP " DRY NEEDLE "

The Alila Hotel Solo, 07 September 2017

SK IDI Wil - Jateng No : 245/ IDI/ Wil - Jateng/IX/ 2017

Participant : 8 SKP, Speaker : 8 SKP, Committee : 1 SKP

Chairman of PERDOSSI Surakarta



Subandi, dr. Sp.S, FINS

NPA : 07-1-19730814

Chairman of the committee



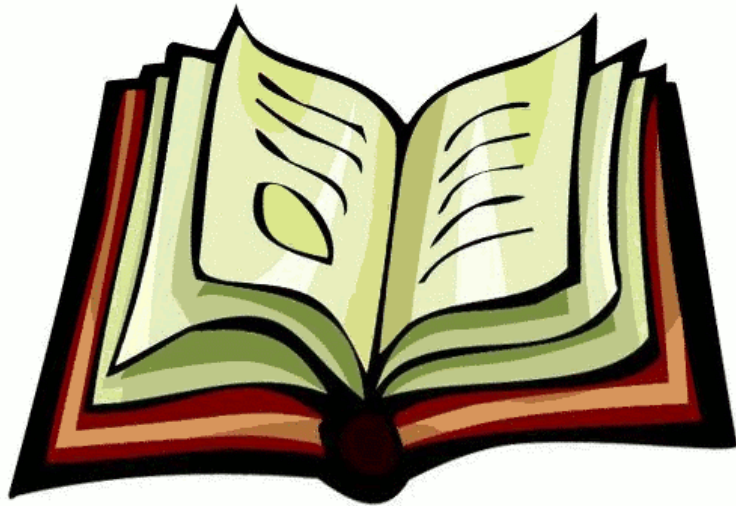
Rivan Dantaji, dr., M.Kes, Sp.S

NPA : 07-1-19760202

BASIC PRINCIPLES OF DRY NEEDLING IN MYOFACIAL PAIN

I Putu Eka Widyadharma

Dry Needling-Definition



Dry Needling

A skilled intervention that uses a thin filiform needle to penetrate the skin and stimulate underlying myofascial trigger points, muscular and connective tissues for the management of neuromusculoskeletal pain and movement impairments.

*(American Physical Therapy Association
Dry Needling Task Force, May, 2012)*

Needles

- Needles can be as short as 12.5 mm or as long as 100 mm. the choice of needle is based on the target tissue and specific techniques used.
- Disposable filiform acupuncture needle with guide tube is used.
- Guide tube minimizes pain

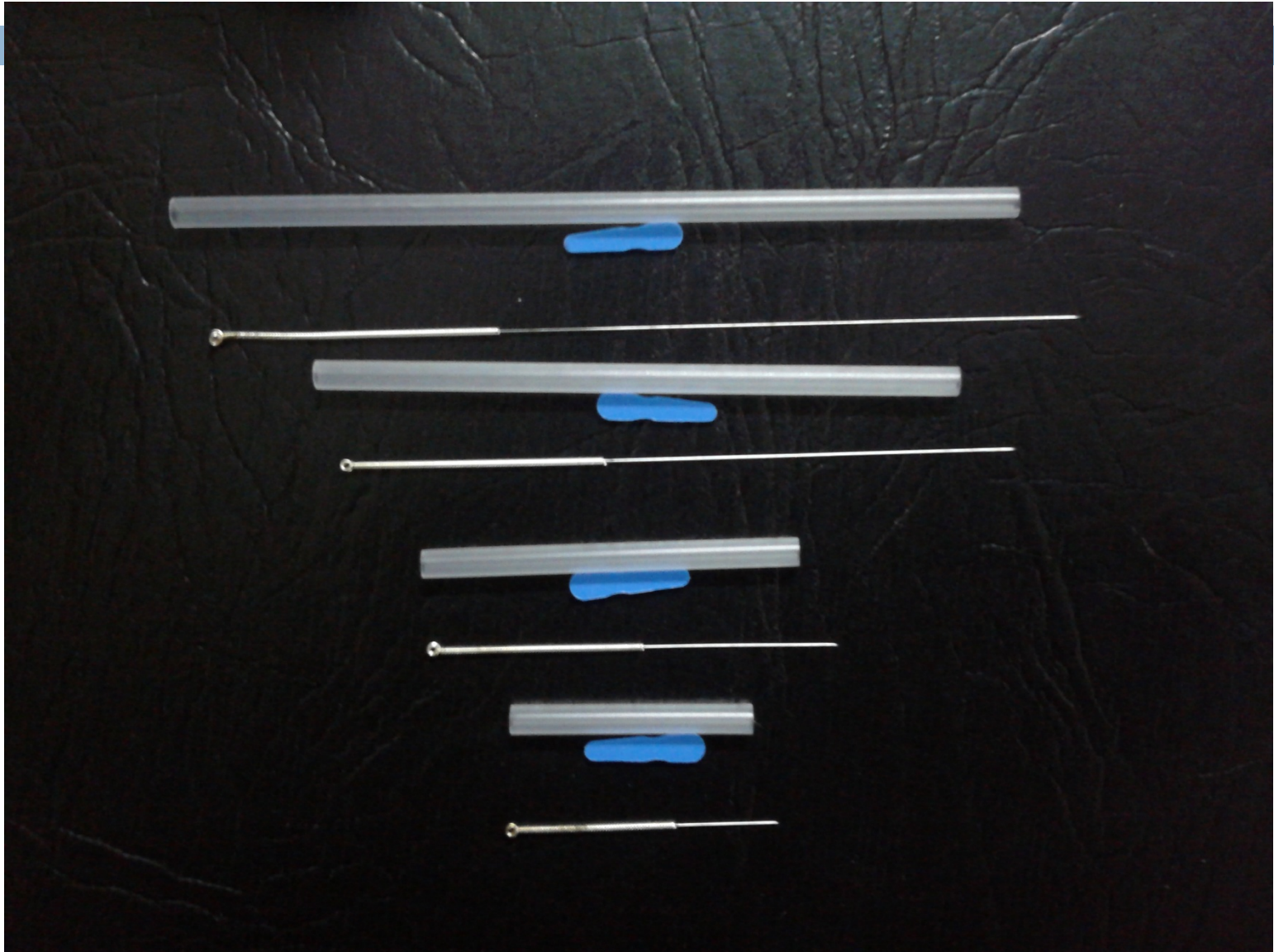
Disposable sterile needles packed



Needles with guide tubes



Needles sans guide tube



Is
Dry Needling
Acupuncture?



Dry Needling versus Acupuncture

Similarities

The Tool

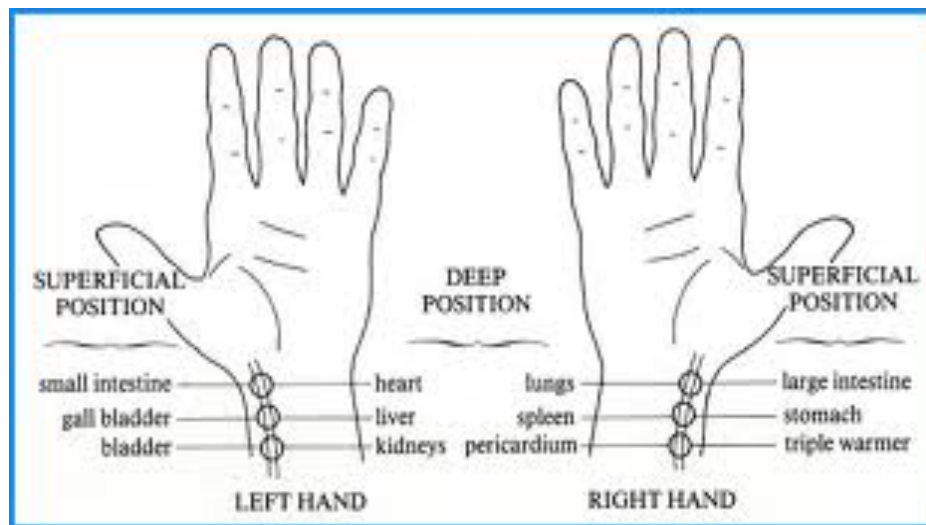
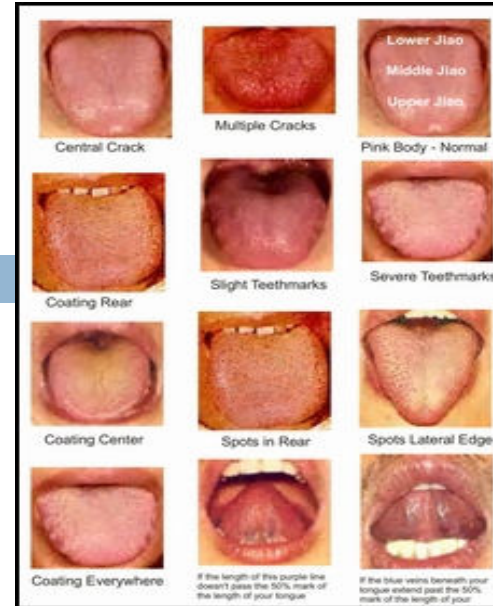
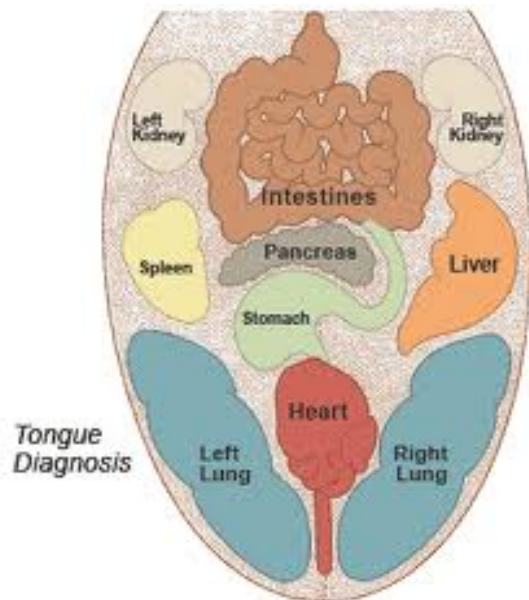


Differences

Evaluation

Application

Overall Goal



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Traditional Chinese Acupuncture

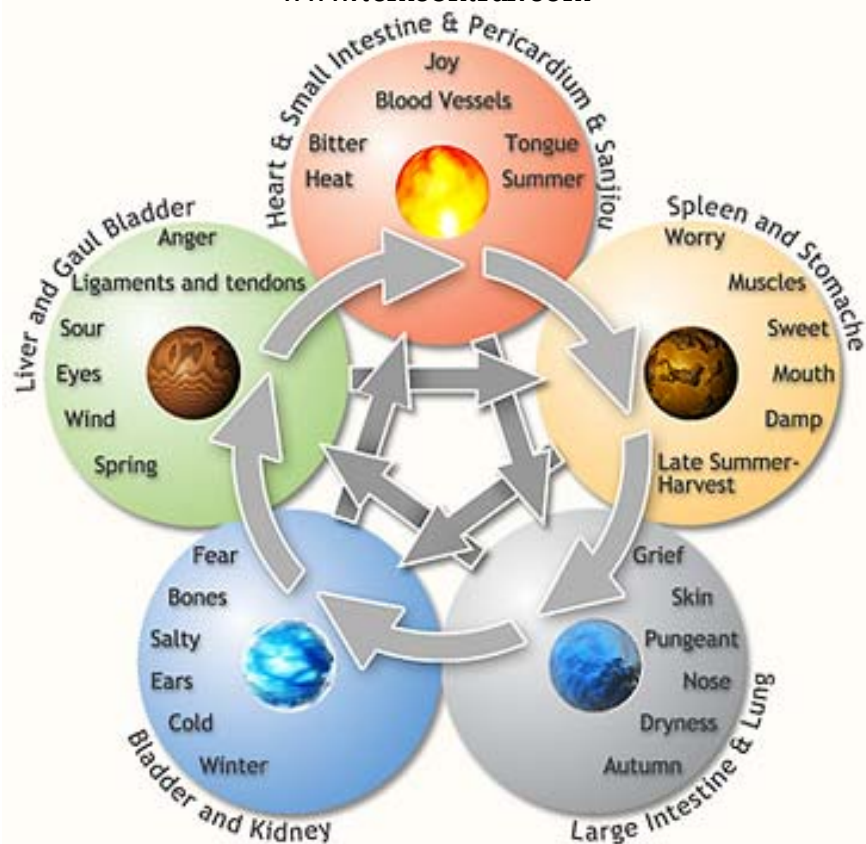
Evaluation utilizes examination of tongue and pulse



Acupuncture Chart.
Copyright 1990 College of Traditional Therapies (S.A.) P/L.



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Traditional Chinese Acupuncture

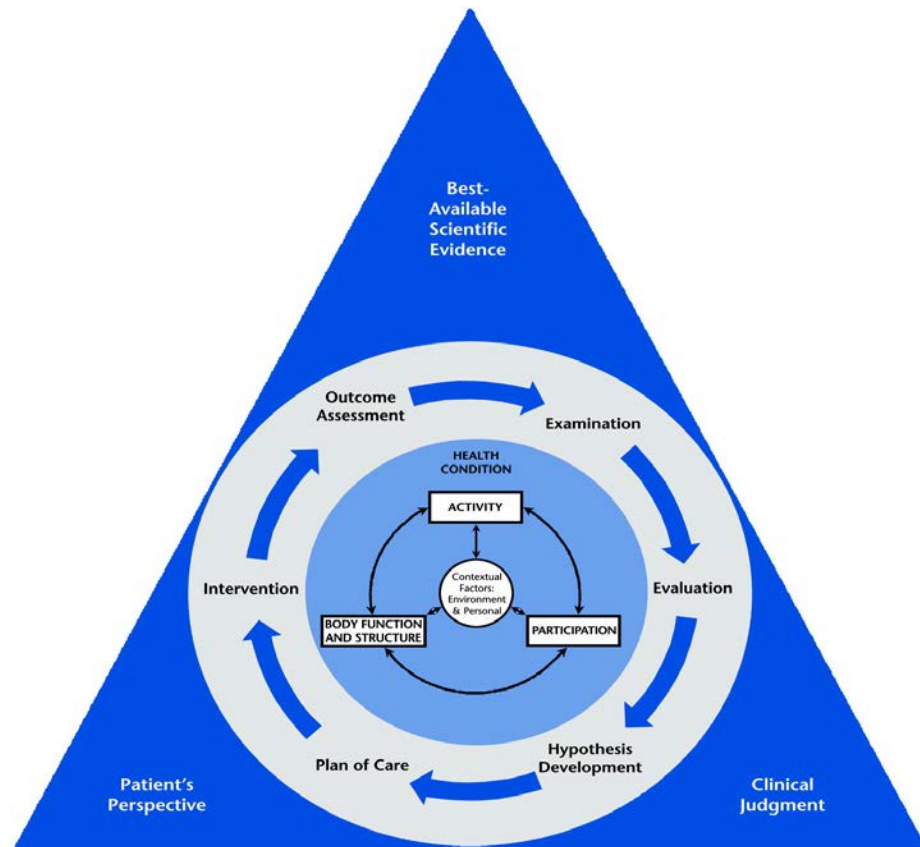
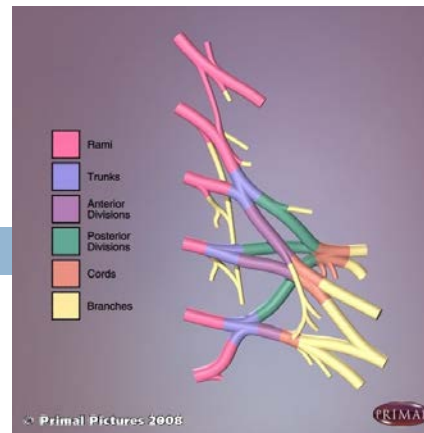
Uses needle to balance energy, life-force, or qi in the body

www.yangacupunctureherbalinstitute.com



Dry Needling

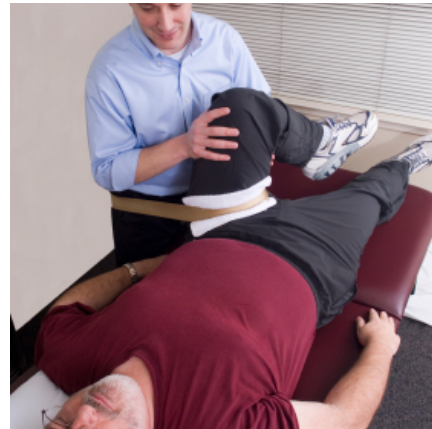
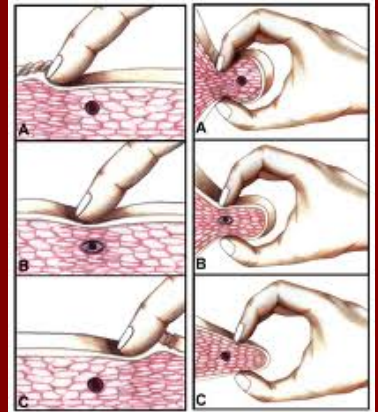
Needle insertion points based on assessment and knowledge of neuroanatomy





Dry Needling

Evaluation includes subjective and objective examination of the neuromuscular system



Response to needling

- Dry needling, when indicated, produces immediate effect.
- Different people respond to needling differently and are thus classified as strong, average and weak responders.
- A strong responder will need minimal needle stimulation to achieve needling effect
- Overstimulation can worsen patient's pain.

Therapeutic effects

- Pain reduction by counter irritation & release of neurotransmitters
- Pain reduction by resolving trigger point
- Promotion of healing by fibroblastic activation
- Promotion of healing by increasing local blood supply

Hypothetical Mechanism of DN


- Mechanical disruption of motor endplate and trigger point relaxes muscle fibers and relieves irritation
- Normalization of muscle chemical balance
- Stretching fascia aligns collagen and activates fibroblast
- Activation of $A\beta$ mechanoreceptors for pain gate control blocking pain transmission by dorsal horn relay neurons

Hypothetical Mechanism of DN

- Activation of endogenous opioid system of the CNS
- Activation of serotonin and noradrenalin neurons in the brainstem and spinal cord descending pathway
- Suppression of substance P secretion by enkephalinergic inhibitory neurons in the dorsal horn.


Suggested Indications

- Trigger points: Releases trigger points
- Pain of muscular origin, e.g. muscular component of acute spinal pain: for analgesia, control of muscle spasm.
- Musculoskeletal pains e.g. osteoarthritis: works like pain killers, provides temporary relief

- 
- Referred pains: works like pain killers, provides temporary relief
 - Pathologies of soft tissue origins: e.g. tennis elbow, plantar fascitis

Absolute Contraindications:

1. In a patient with needle phobia
2. Unwilling patient - patient beliefs, fear etc
3. Unable to give consent - age-related, communication, cognitive
4. History of untoward reaction to needling (or injection) in the past
5. Medical emergency

- 
6. Into a muscle or area in patients on anticoagulant therapy or with thrombocytopenia, where haemostasis by palpation cannot be carried out appropriately e.g. psoas, tibialis posterior
 7. Into an area or limb with lymphoedema as patients with lymphoedema maybe more susceptible to infection. In addition it is not advisable to needle a limb after surgical lymphectomy.

Relative contraindication

1. **Abnormal Bleeding Tendency:** anticoagulant therapy, thrombocytopenia
2. **Compromised Immune System:**
 1. Immunocompromised patients from disease (e.g. Blood borne disease, Cancer, HIV, AIDS, Hepatitis, bacterial endocarditis, incompetent heart valve or valve replacements etc.)
 2. Immunocompromised from immunosuppression therapy or on cancer therapy
 3. Debilitated patients or those with chronic illness etc
 4. Acute immune disorders (E.G. acute states of rheumatoid arthritis, current infection, local or systemic etc.)



3. Vascular Disease

4. Diabetes

5. Pregnancy: one in four to five pregnancies may naturally terminate in the first trimester.

6. Frail Patients

7. Epilepsy

8. Children

How is it performed?

- With careful precision the structure to be needled is chosen.
- Then sterilized disposable needles are pierced through the skin into the target tissue.
- Choice of needle is dependent upon depth of target tissue.
- A clean field technique is used. As there is minimal or no bleeding, sterile field is not needed.
- The needles are kept inserted for a span of 30 seconds to few minutes and then withdrawn and disposed properly.

Dangers of Dry Needling

Pneumothorax

- Dry needling may puncture pleura and cause pneumothorax.
- The risk of a pneumothorax is very small if proper needling techniques are employed

Blood Vessels

- with DN there is a potential of injury to blood vessels.
- Palpating for a pulse to locate an artery prior to DN minimizes the risk.

Nerve

- with DN there is potential for injury to nerves.
- Special consideration needs to be given in relation to the spine and in the posterior sub occipital area
- the brain stem is accessible through the foramen magnum.

Organs

- Anatomical knowledge of internal organs is important as with DN there is potential for injury to internal organs such as the kidney or penetration into the peritoneum cavity.

Minor adverse effects



1. needling pain
2. aggravation of symptoms
3. faintness, drowsiness



Original Research—CME

Dry Needling Alters Trigger Points in the Upper Trapezius Muscle and Reduces Pain in Subjects With Chronic Myofascial Pain

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Kathryn Armstrong, DPT, Diego Turo, PhD, Paul Otto, BS, Juliana Heimur, BS,
Nikki Thaker, BS, Siddhartha Sikdar, PhD

Abstract

Objective: To determine whether dry needling of an active myofascial trigger point (MTrP) reduces pain and alters the status of the trigger point to either a non-spontaneously tender nodule or its resolution.

Design: A prospective, nonrandomized, controlled, interventional clinical study.

Setting: University campus.

Participants: A total of 56 subjects with neck or shoulder girdle pain of more than 3 months duration and active MTrPs were recruited from a campus-wide volunteer sample. Of these, 52 completed the study (23 male and 33 female). Their mean age was 35.8 years.

Interventions: Three weekly dry needling treatments of a single active MTrP.

Main Outcome Measures: Primary Outcomes: Baseline and posttreatment evaluations of pain using a verbal analogue scale, the Brief Pain Inventory, and the status of the MTrP as determined by digital palpation. Trigger points were rated as active (spontaneously painful), latent (requiring palpation to reproduce the characteristic pain), or resolved (no palpable nodule).

Secondary Outcomes: Profile of Mood States, Oswestry Disability Index, and Short Form 36 scores, and cervical range of motion.

Table 3
 Baseline and follow-up characteristics: Physical findings, pain and self-reported outcomes (mean ± SD)

Characteristic	n	Baseline	Follow-up	P value
Physical finding				
Cervical ROM extension (°)	51	73.8 ± 12.8	74.3 ± 12.0	.741
Cervical ROM flexion (°)	51	55.2 ± 11.0	57.1 ± 8.3	.192
Rotation asymmetry unilateral (°)	27	8.1 ± 6.3	3.1 ± 5.4	.001
Rotation asymmetry bilateral (°)	24	5.4 ± 4.4	2.4 ± 3.2	.021
Side bending unilateral (°)	27	5.6 ± 3.8	2.7 ± 2.9	.001
Side bending bilateral (°)	24	5.5 ± 6.4	3.1 ± 3.2	.109
PPT treated site unilateral (lb)	27	7.6 ± 3.3	9.4 ± 3.7	.006
PPT treated site bilateral (lb)	24	6.7 ± 3.0	8.4 ± 3.1	.012
Pain (scores)				
BPI	49	3.4 ± 1.6	2.3 ± 1.9	<.001
VAS treated side unilateral	27	3.5 ± 2.4	0.9 ± 1.3	<.001
VAS treated side bilateral	25	3.0 ± 1.4	0.9 ± 1.2	<.001
VAS untreated side unilateral	27	1.0 ± 1.9	0.4 ± 1.1	.203
VAS untreated side bilateral	25	2.6 ± 1.2	0.9 ± 1.2	<.001
SF-36 pain	50	62.5 ± 18.4	69.3 ± 16.5	.002
Self-reported outcomes				
POMS confusion	49	0.28 ± 0.39	0.2 ± 0.35	.418
POMS depression	49	0.11 ± 0.23	0.07 ± 0.18	.151
POMS fatigue	49	0.2 ± 0.3	0.51 ± 0.69	.056
POMS tension	49	0.47 ± 0.50	0.28 ± 0.33	.012
POMS mood	49	1.09 ± 1.01	1.33 ± 1.09	.013
POMS vigor	49	1.49 ± 0.94	1.58 ± 0.93	.261
POMS anger	49	0.15 ± 0.35	0.08 ± 0.27	.12
SF-36 general health	50	76.9 ± 19.1	76.8 ± 18.6	.913
SF-36 mental health	50	75.9 ± 11.8	79.1 ± 11.4	.017
SF-36 physical functioning	50	88.5 ± 14.3	91.4 ± 11.3	.03
SF-36 emotional	50	83.4 ± 21.5	88.8 ± 16.3	.051
SF-36 physical role	50	85.1 ± 17.0	86.9 ± 16.7	.471
SF-36 social functioning	50	87.8 ± 16.9	89.7 ± 15.9	.253
SF-36 vitality	50	58.7 ± 17.0	60.7 ± 16.9	.258
Oswestry Disability Index score	50	10.8 ± 6.0	8.5 ± 7.1	.004

BPI = Brief Pain Inventory; PPT = pressure pain threshold; POMS = Profile of Mood States; ROM = range of motion; SF-36 = MOS 36-Item Short-Form Health Survey; VAS = verbal analogue scale.

Conclusions:

Dry needling reduces pain and changes MTrP status. Change in trigger point status is associated with a statistically and clinically significant reduction in pain. Reduction of pain is associated with improved mood, function, and level of disability.

ORIGINAL RESEARCH

Effectiveness of Dry Needling on the Lower Trapezius in Patients With Mechanical Neck Pain: A Randomized Controlled Trial



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Tomás Gallego-Izquierdo, PhD,^a Alicia Urraca-Gesto, PhD,^c Antonia Gómez-Conesa, PhD,^d
Natalia Romero-Franco, PhD,^a Gustavo Plaza-Manzano, PhD^e

From the ^aPhysical Therapy Department, Alcalá University, Madrid; ^bPhysical Therapy Department, Center for University Studies Cardenal Herrera University, Valencia; ^cRehabilitation and Physical Therapy Department, University Hospital Alcorcón Foundation, Madrid; ^dDepartment of Physical Therapy, Faculty of Medicine, Murcia University, Murcia; and ^ePhysical Medicine and Rehabilitation Department, Medical Hydrology, Faculty of Medicine, Complutense University Madrid, Madrid, Spain.

Abstract

Objective: To evaluate the effect of dry needling into a myofascial trigger point (MTrP) in the lower trapezius muscle of patients with mechanical idiopathic neck pain.

Design: A single-center, randomized, double-blinded controlled study.

Setting: Patients were recruited from the student population of a local hospital by advertisement in the university clinic from January 2010 to December 2011.

Participants: Patients (N=72) with unilateral neck pain, neck pain for ≥ 3 months, and active trigger points in the lower trapezius muscle were randomly assigned to 1 of 2 treatment groups. All the patients completed the study.

Interventions: Dry needling in an MTrP in the lower trapezius muscle, or dry needling in the lower trapezius muscle but not at an MTrP.

Main Outcome Measures: The visual analog scale (VAS), Neck Pain Questionnaire (NPQ), and pressure-pain threshold (PPT) were assessed before the intervention and 1 week and 1 month postintervention.

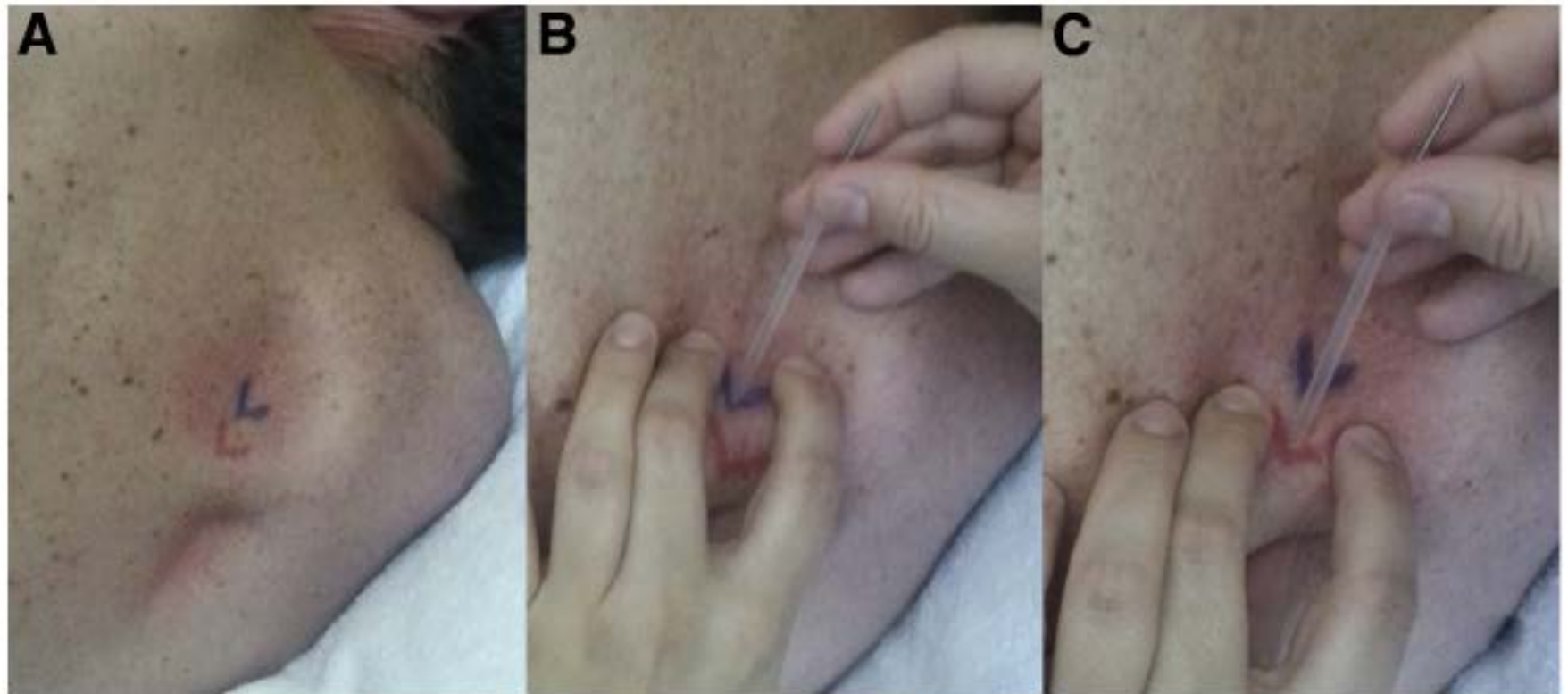
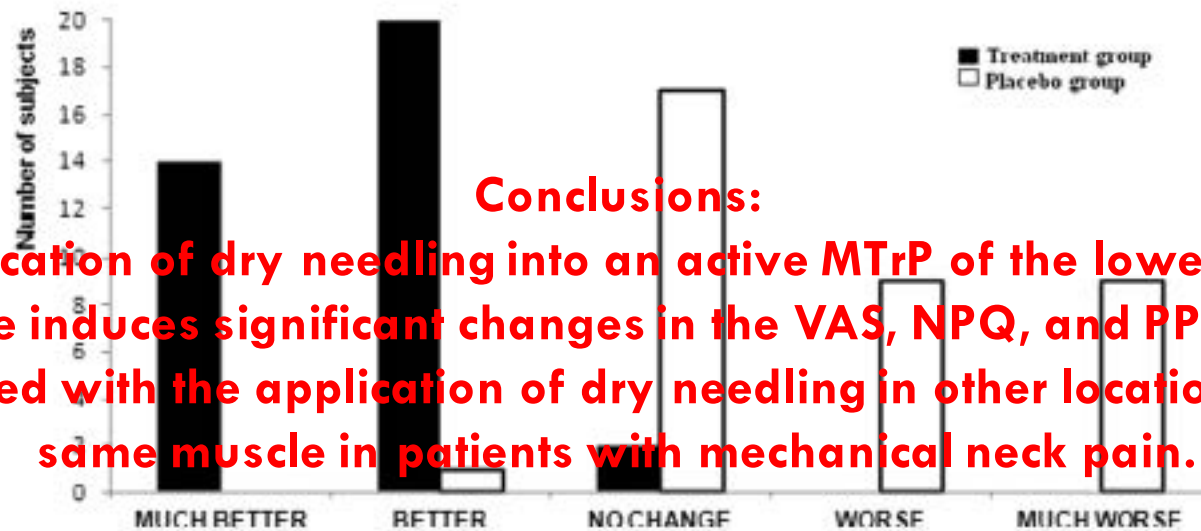


Fig 1 (A) Position of patient during dry needling. (B) Dry needling on the lower trapezius, near but outside the trigger point (1.5cm away from the trigger point). (C) Dry needling on the lower trapezius on the trigger point.

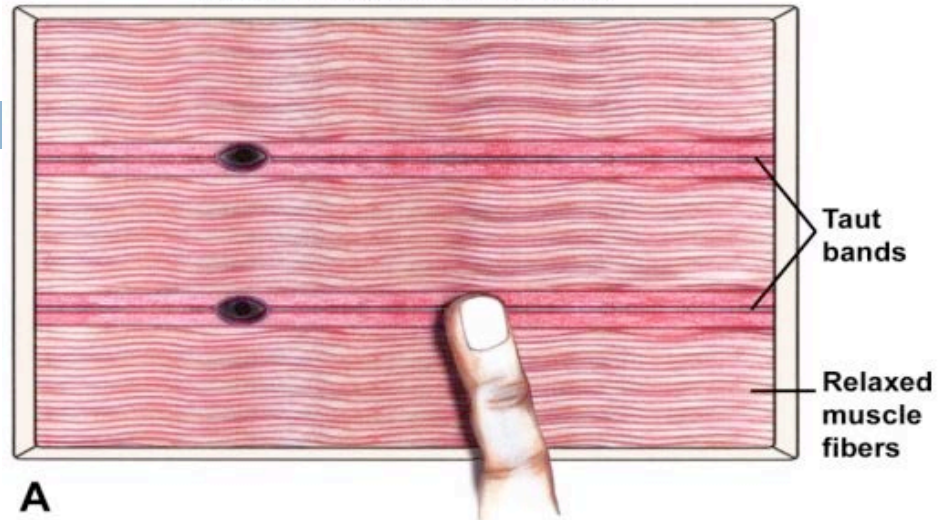


Conclusions:

The application of dry needling into an active MTrP of the lower trapezius muscle induces significant changes in the VAS, NPQ, and PPT levels compared with the application of dry needling in other locations of the same muscle in patients with mechanical neck pain.

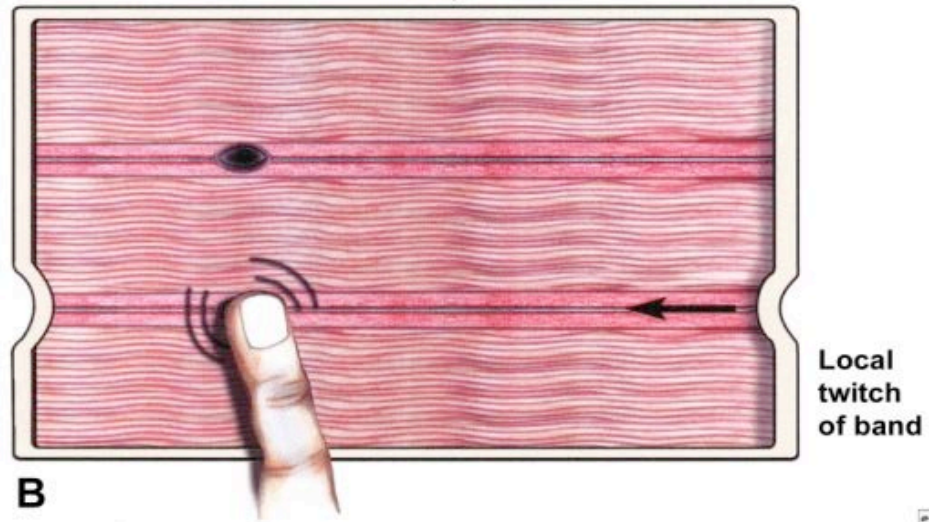
Fig 3 Number of subjects classified according to rates of subjective change in pain after 1 month of follow-up compared with baseline.

Taut (palpable) bands in muscle

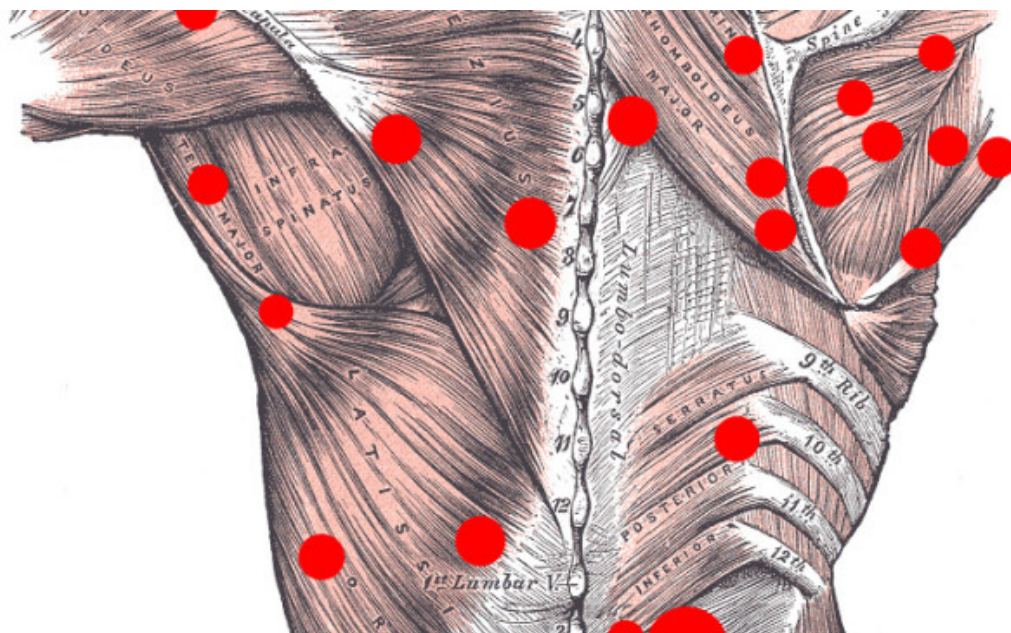
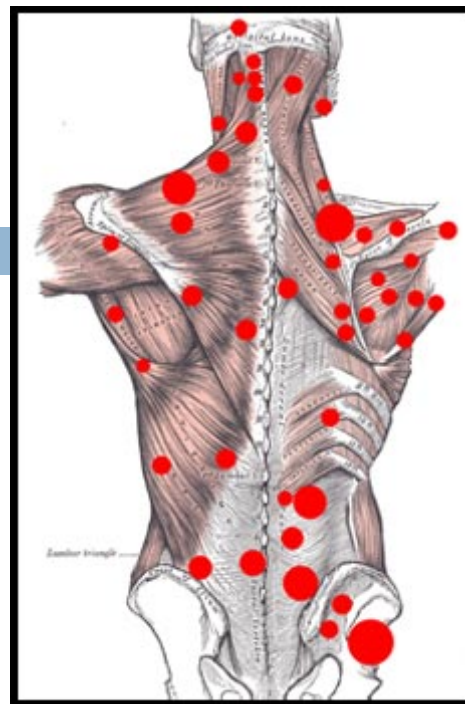
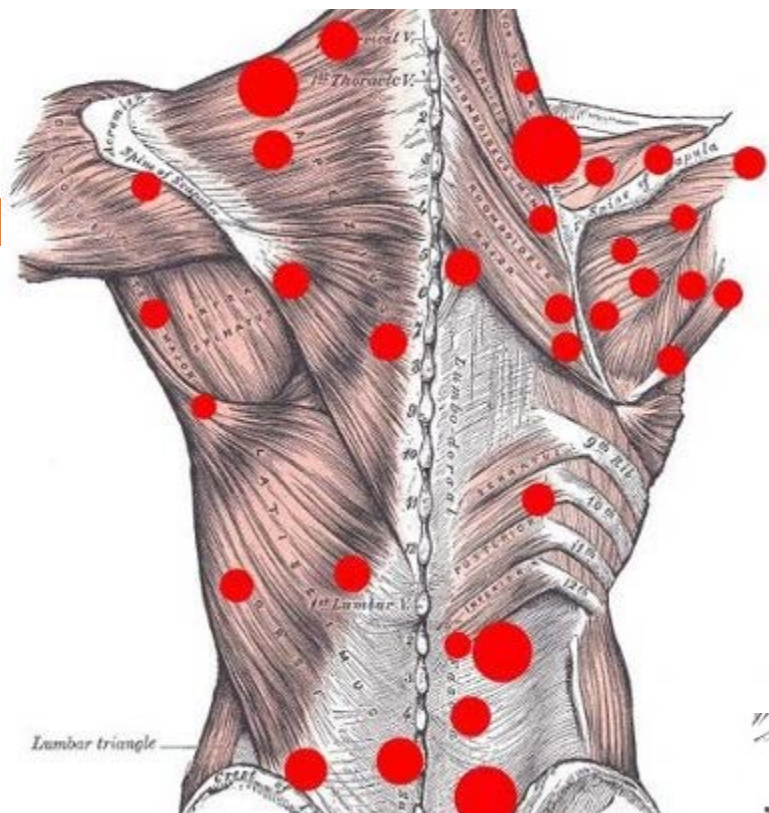


A

Low twitch response



B



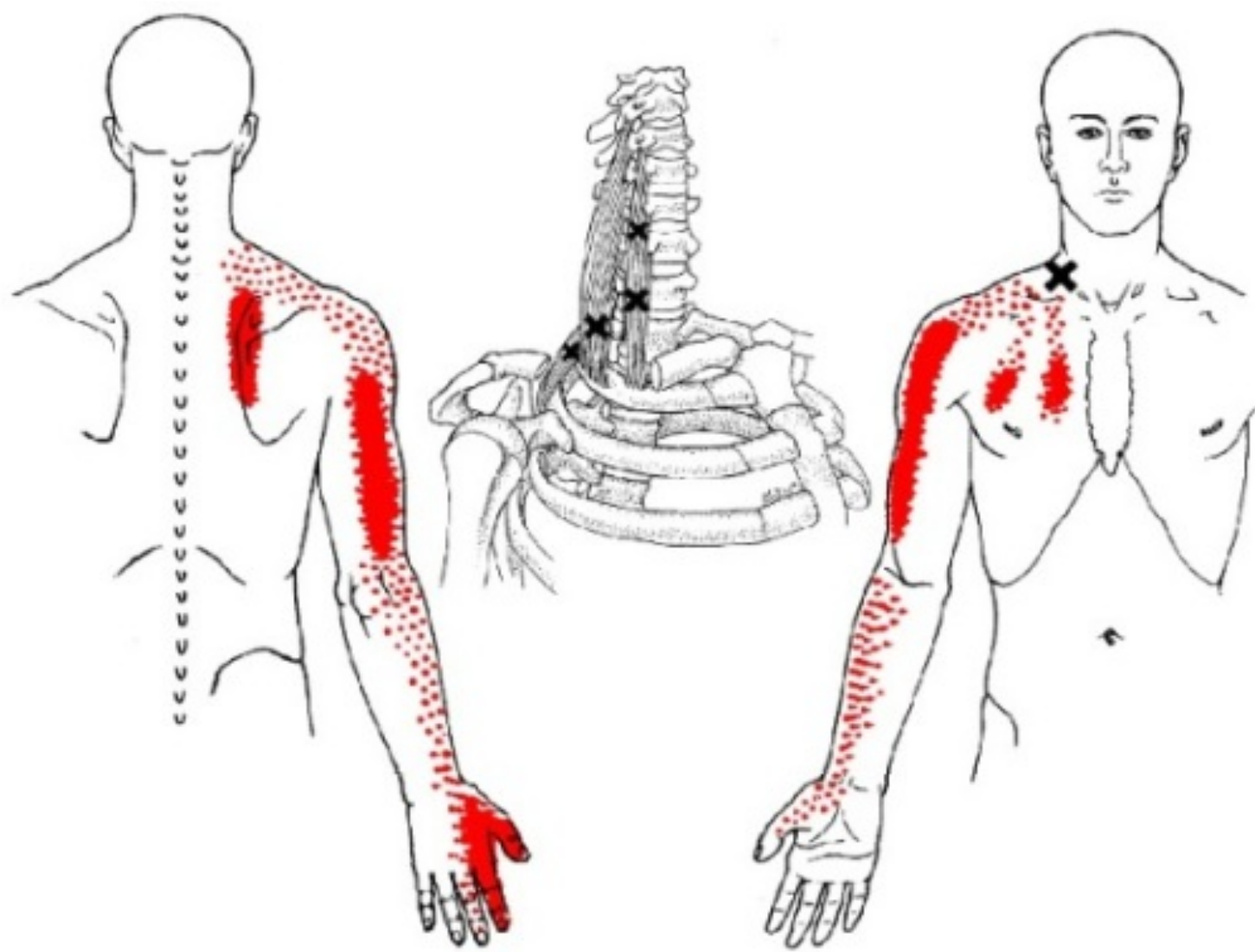
PAIN IN THE UPPER TRAPEZIUS MUSCLE

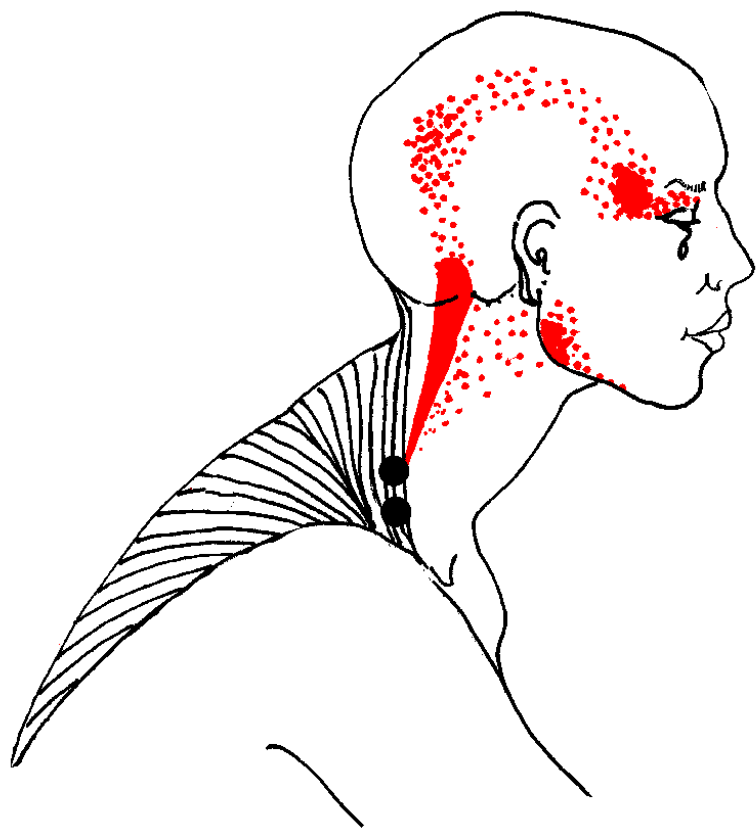


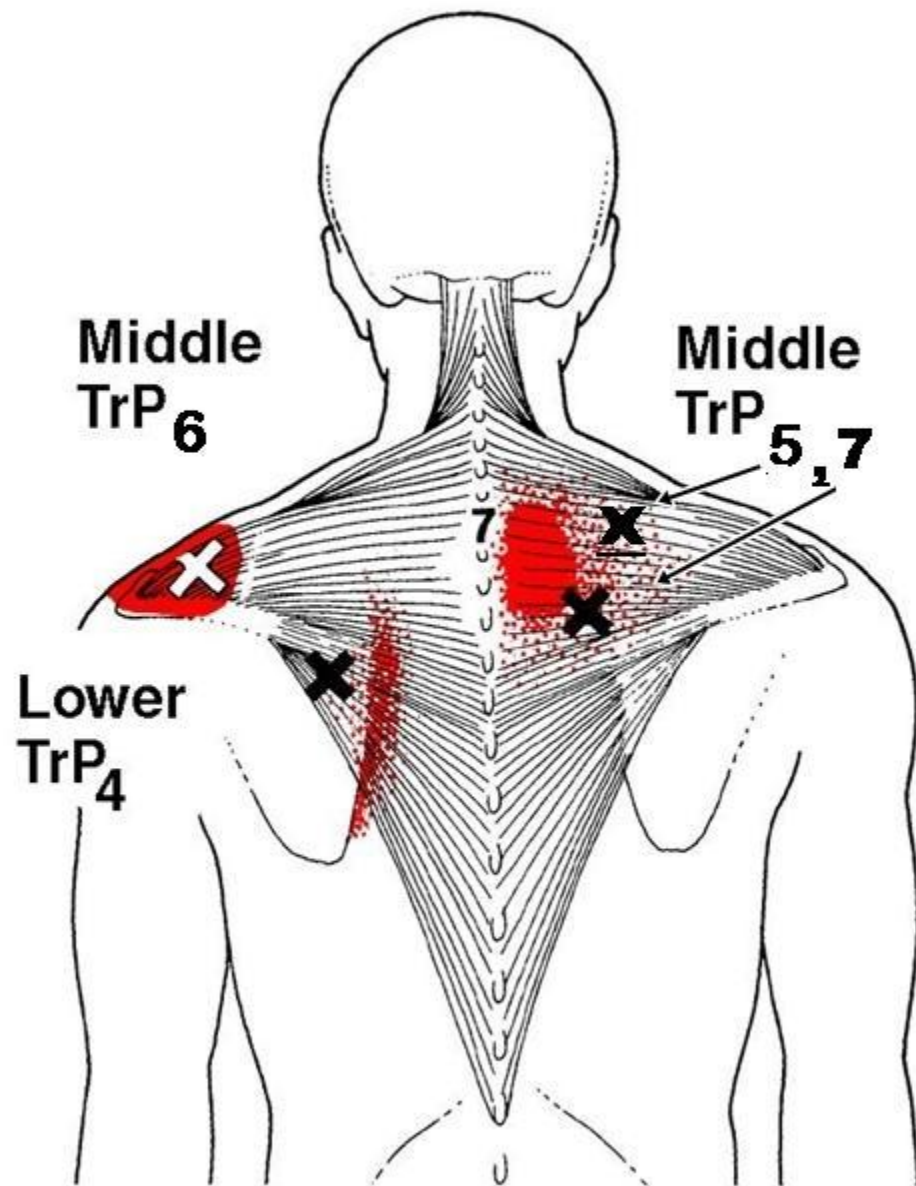
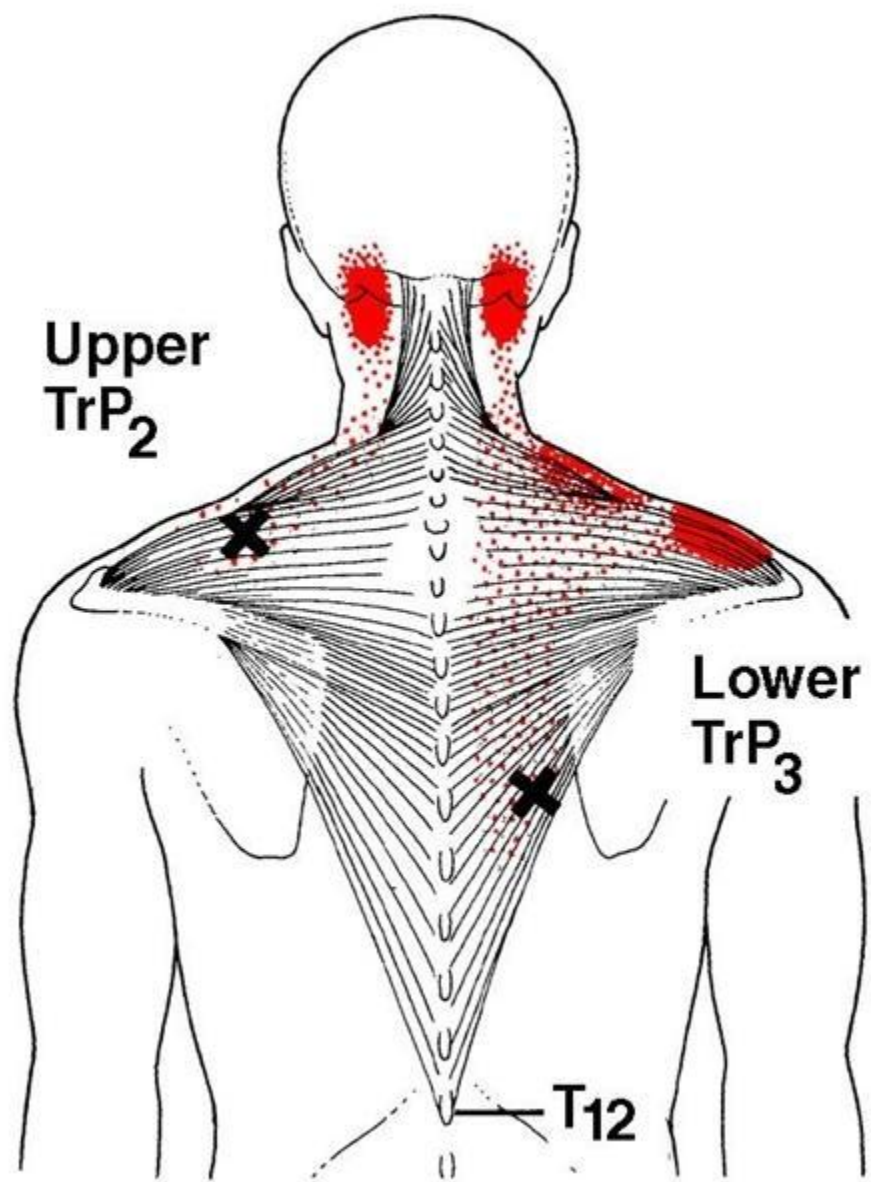
X=trigger point

■=location of pain

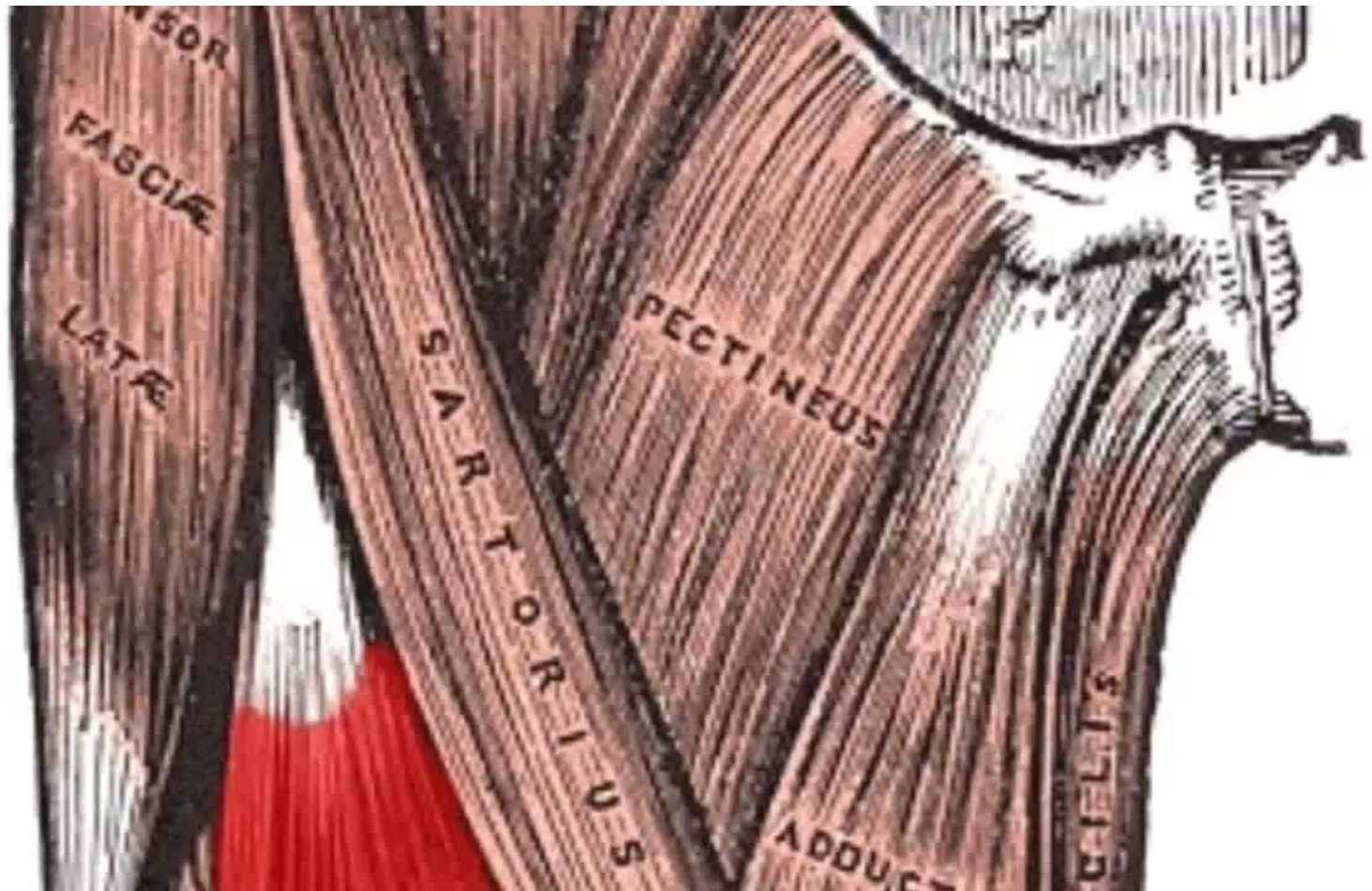
■=referral pattern of trigger point







Rectus Femoris



Thank You!

