MYOFASCIAL PAIN AND TRIGGER POINT INJECTIONS

OTHER RESOURCES

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Student resources access at
www.doctornaran.com

Edited by Gabi Westphal

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Glossary

(*Taken from "Myofascial Pain and Dysfunction Trigger Point Manual: Upper Half of Body. Vol 1 by David G. Simons MD; Janet Travell MD; Lois S. Simons PT (1999). Williams & Wilkins. 2nd Ed. Pg. 1-8.)*

Abduction: movement away from the mid-line.

Active Range of Motion: the extent of movement (in degrees) of an anatomical segment of a joint when the movement is produced voluntarily.

Acute: of recent onset (hours or days).

Adduction: movement toward the mid-line.

Allodynia: Pain due to a stimulus that does not ordinarily provoke pain (decreased pain threshold; the response is a different kind of sensation than that normally evoked by the stimulus).

Attachment Trigger Point: a trigger point at the musculotendinous junction and/or the osseous attachment of the muscle that identifies the enthesopathy cause by the unrelieved tension characteristic of the taut band that is produced by a central trigger point.

Central Myofascial Trigger Point: a myofascial trigger point that is closely associated with dysfunctional endplates that is located near the center of the muscle fibers.

Chronic: long-standing (weeks, months or years), but NOT necessarily irreversible. Symptoms can be mild or severe.

Contraction (of muscle): activation of the contractile elements of muscle fibers by propagated action potentials.

Deep: father from the surface; opposite of superficial.

Distal: father from the trunk or point of origin; opposite of proximal.

Dysesthesia: unpleasant abnormal sensation whether spontaneous or evoked.

Enthesitis: traumatic disease occurring at insertion of muscles where recurring concentration of muscle stress provokes inflammation with a strong tendency toward fibrosis and calcification.

Extension: straightening of hinge joints. In the upper limb, it is movement in the posterior direction in a sagittal plane. In the case of the thumb, it is movement in the radial direction in the plane of the palm.

External Rotation: rotation of the anterior surface of the limb away form the midline of the body. For the scapula, it is upward rotation about an anteroposterior axis, with the inferior angle moving laterally and glenoid moving cranially.

Flat palpation: examination by finger pressure that proceeds across the muscle fibers at a right angle to their length, while compressing them against a firm underlying structure, such as bone.

Flexion: bending of hinge joints. In the upper limbs, it is movement in the anterior direction of the sagittal plane.

Hyperesthesia: increased in sensitivity to stimulation, excluding the special senses.

Hyperpathia: a painful syndrome characterized by abnormally painful reaction to stimulus, especially repetitive stimulus.

Inferior: toward the soles of the feet.

Involved muscle: a muscle that has developed one or mor active or latent trigger points.

Jump Sign: a general pain response of the patient, who winces, may cry out, and may withdraw in response to pressure applied on a trigger point.

Key Myofascial Trigger Point: a trigger point responsible for activating one or more satellite trigger points. Clinically, a key trigger point is identified when inactivation of that trigger point also inactivates the satellite trigger point.

Lateral: farther form the midsagittal plane of the body or from the midline of a structure.

Local Twitch Response: a transient contraction of a group of tense muscle fibers (taut band) that traverse a trigger point. Contraction of the fibers is in response to

stimulation (needling) of the same trigger point or nearby trigger point. (Not to be confused with a Jump Sign).

Medial: closer to the midsagittal plane of the body or the midline of a structure.

Myalgia: pain in the muscle or muscles. Can be used in two ways: 1) diffusely aching muscles due to systemic disease, such as a viral infection or 2) the spot tenderness of a muscle or muscles as in myofascial trigger points.

Myofascial Pain Syndrome: 1) the sensory, motor and autonomic symptoms caused by myofascial trigger points (as used throughout these modules), rather than, 2) a regional pain syndrome of any soft tissue origin.

Myofascial Trigger Point: a hyperirritable spot in skeletal muscle that is associated with a hypersensitive palpable nodule in a taut band. The spot is painful on compression and can give rise to characteristic referred pain, referred tenderness, motor dysfunction and autonomic phenomena. Etiologically, a cluster of electrically active loci each of which is associated with a contraction knot and a dysfunctional motor endplate in skeletal muscle.

Passive Range of Motion: the extent of movement of an anatomical segment at a joint when movement is produced by an outside force without voluntary assistance or resistance by the subject.

Pincer Palpation: examination of a part by holding it in a pincer grasp between thumb and fingers. (Differs from flat palpation).

Posterior: to the back of the body.

Referred Trigger Point Pain: pain that arises in a trigger point, but is felt at distance, often entirely remote from its source.

Snapping Palpation: a fingertip is placed against the tense band of muscle at right angles to the direction of the band and suddenly presses down while the examiner draws the finger back as to roll the underlying fibers under the finger. (Differs between Pincher and Flat palpation techniques).

Imaging Features of Spinal Degeneration in Asymptomatic Populations

Introduction

Spinal degeneration is a common finding in imaging studies of the spine, often associated with symptoms such as back pain. However, it has been observed that these degenerative changes can also occur in individuals without any symptoms. This chapter aims to explore the prevalence and significance of imaging features of spinal degeneration in asymptomatic populations.

Background

Degenerative changes in the spine, including disk degeneration, disk bulge, disk protrusion, annular fissures, facet degeneration, and spondylolisthesis, are frequently detected on imaging studies such as MRI and CT scans. These findings are often interpreted as potential causes of back pain, leading to medical interventions. However, recent research suggests that such degenerative features may be present in asymptomatic individuals as well, raising questions about their clinical significance.

Literature Review

A systematic review of existing literature was conducted to analyze the prevalence of imaging findings of spinal degeneration in asymptomatic individuals across different age groups. Studies included in the review reported imaging findings in asymptomatic populations, excluding individuals with a history of back pain or other spinal symptoms.

Key Findings

The review revealed that imaging findings of spinal degeneration are prevalent in asymptomatic individuals, with the prevalence increasing with age. For instance, disk degeneration was observed in 37% of asymptomatic individuals aged 20, increasing to 96% in those aged 80. Similarly, other degenerative features such as disk bulge, disk protrusion, and facet degeneration showed increasing prevalence with age.

Clinical Implications

The findings suggest that many imaging-based degenerative features of the spine may be part of the normal aging process rather than pathological conditions associated with pain. Therefore, clinicians should interpret these findings cautiously, considering the patient's clinical presentation and history. Understanding the prevalence of imaging findings in asymptomatic individuals is crucial for guiding clinical decision-making and avoiding unnecessary interventions.

Conclusion

Imaging studies of the spine often reveal degenerative changes that may raise concerns about underlying pathology. However, evidence indicates that such changes are commonly found in asymptomatic individuals, particularly with advancing age. Clinicians should be aware of these findings and interpret them in the context of the patient's overall clinical condition when formulating treatment plans. Further research is needed to better understand the relationship between imaging findings and symptomatic spinal conditions.

Age-specific prevalence estimates of degenerative spine imaging findings in asymptomatic patients

Imaging Finding	Age (yrs)						
	20	30	40	50	60	70	80
Disk degeneration	37%	52%	68%	80%	88%	93%	96%
Disk signal loss	17%	33%	54%	73%	86%	94%	97%
Disk height loss	24%	34%	45%	56%	67%	76%	84%
Disk bulge	30%	40%	50%	60%	69%	77%	84%
Disk protrusion	29%	31%	33%	36%	38%	40%	43%
Annular fissure	19%	20%	22%	23%	25%	27%	29%
Facet degeneration	4%	9%	18%	32%	50%	69%	83%
Spondylolisthesis	3%	5%	8%	14%	23%	35%	50%

Systematic Literature Review of Imaging Features of Spinal Degeneration in Asymptomatic Populations
W. Brinjikji AJNR Am J Neuroradiol 2015, 36 (4) 811-816

Intake Form

Date: _____

First Name: _____ Last Name: _____

Home Phone #: _____ Cell #: _____

Email: _____

Name of family doctor: _____

How did you hear about us? _____

Pain Questionnaire

1. What is the reason you are seeing Dr. Naran for today?

_____

2. How long have you had this pain? _____

3. What is the percentage of the day you experience this pain:

☐ *0-25%* ☐ *26-50%* ☐ *51-75%* ☐ *76-100%*

4. On a scale from 1-10, rate how bad is your pain *(0 = no pain and 10 = worst imaginable pain)*: ____

5. What makes your pain feel better? _____

6. What makes your pain feel worse? _____

7. What other treatments have you tried?

☐ Physiotherapy ☐ Massage ☐ Chiropractic ☐ Acupuncture ☐ Medication

8. Do you currently have a claim open with ICBC? If yes, you may be eligible for active rehab treatments funded by ICBC. ☐ *Yes* ☐ *No* Claim #_____

PLEASE TURN OVER

TRIGGER POINT THERAPY CONSENT FORM

Trigger Point Injections (TPI) are used to treat painful and tender muscles. Normally, muscles are able to contract and relax when they are active. A Trigger point is a discreet knot or tight ropy band of muscles that occurs when muscles fail to relax. The knot can be felt under the skin and may twitch involuntarily when touched Gump sign). Trigger point areas may irritate the nerves around them, and cause referred pain, or pain to other parts of the body.

Trigger Point Injections uses fine, disposable, and sterile medical needles to inject local anesthetic (lidocaine and/or dextrose). This inactivates the trigger point and alleviates pain allowing the muscle and the surrounding nerve endings to desensitize and heal.

I understand and accept the treatment protocol.

I understand and accept the common risks and complications of trigger point injections. Medical complications may include (but not limited to):

- Soft tissue swelling/bruising;
- Infection;
- Increased pain (for 24 hours).

I understand that there are serious but rare complications:

- Trauma to nerves causing temporary numbness;
- Pneumothorax/collapsed lung (if shortness of breath is noted go to local ER as treatment is readily available).

GENERAL ADVICE:

Before treatment - have a light meal, no alcohol/tranquilizer 4 hours before treatment, take pain/prescribed medication as directed by your doctor. Wear dark-colored clothing.

After treatment - rest for 2 hours if possible, take pain medication as prescribed, avoid strenuous activity for 2 days even if you are pain-free.

Patients are requested to inform myself about conditions such as allergies, pregnancy, pacemakers, hepatitis, HIV, haemophilia, bleeding disorders or the use of blood thinners prior to treatment.

I certify that I have read and understand this consent form. And, that by signing this form once, I agree to assume all the risks for this treatment procedures, and for any and all future treatment procedures that I receive at this clinic.

Trigger Point Injections are covered by MSP fee plan, therefore there is no cost to the patient directly.

Date: _____

Signature: _____

Medical History

1. Present Medical History and **duration** of condition:

☐ *Hypertension* _____ ☐ *Diabetes* _____ ☐ *Cancer* _____ ☐ *Thyroid* _____

☐ *Heart Problems* _____ ☐ *None* ☐ *Other* _____

2. Surgical History related to your pain:

_____

_____

3. Present Medications, Name and Dosage Required:

_____

_____

_____

_____

4. Allergies or Reactions to Medications: ☐ *No known drug Allergies*

_____

_____

_____

5. Do you have Alcoholic drinks? ☐ *Yes* ☐ *No*

If yes, how many in a week? _____

6. Do you smoke? ☐ *Yes* ☐ *No*

If yes, how many in a day? _____

Aftercare Advice:

- Stay active but refrain from doing any strenuous exercise/activity for the next 3-4 days, especially involving the areas that were treated. Gentle dynamic stretching is encouraged.
- Refrain from repetitive motions involving the treated muscles, lifting/carrying heavy objects and prolonged sitting/standing. *For example: If you are working at a computer, take a break every ~30 minutes to perform a quick dynamic stretch then continue with your work.*
- Use your regular pain medications or over the counter medications if you feel you are experiencing increased discomfort.
- Stay well-hydrated, drinking ~8 cups of water daily.

Common Side Effects After Treatment:

- **Bruising at the site of treatment**: It is completely normal to have some bruising or hematoma (bumps under the skin caused by blood) after treatment and is generally of no concern as it will typically resolve on its own within a few days.

What to expect After Your Treatment:

- **Fatigue or soreness**: In the first 24 hours after the treatment, it is completely normal. You can apply heat and/or ice to the sore areas or take acetaminophen.
- Some patients will feel better for a while, then the pain may return temporarily.
- Some patients will experience no immediate changes during the day of the treatment.

When to Contact the Clinic:

- If you have any difficulty breathing after receiving treatment in the neck or upper back area.
- If you have bleeding from the treated areas that will not stop.
- If you have any signs of infection such as discharge or increasing redness and pain around the treated area.

If you ever have any concerns or questions, contact the clinic to speak with the staff.

Outside of hours, call 811. **If it is an emergency, always call 911 or visit your local emergency department.**

Online Resources on Trigger Point

The following resources are available online:

Supplies

- Henry Schein (https://www.henryschein.ca/): Supplier for needles, syringes, lidocaine and dextrose.
- Relaxus (https://www.relaxus.com/): Supplier for bed and cushions.

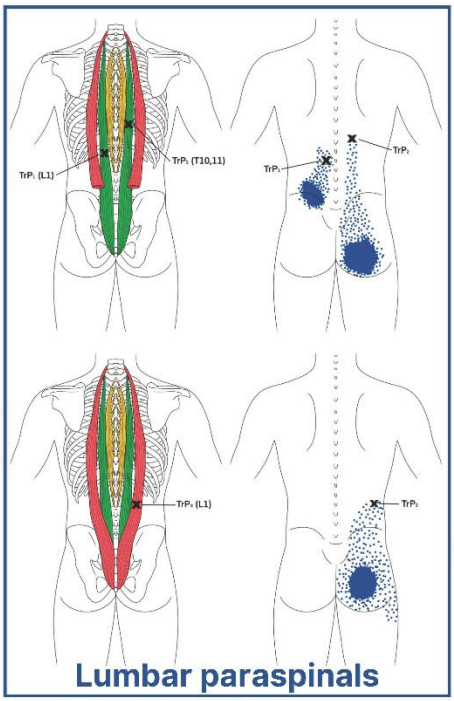
Continued Education

- TriggerPoints.net (http://www.triggerpoints.net/): Free website with full body pain patterns of trigger points.
- Learn Muscle (https://learnmuscles.com/): Subcription based website with pictures and videos of all muscles of the body.
- Myopain Seminars (https://www.myopainseminars.com/): A comprehensive educational platform offering courses and certifications in myofascial pain, dry needling, and related therapies.
- Needle Lab (https://needlelab.podia.com/): An online resource providing practical and in-depth training for dry needling and trigger point therapy.

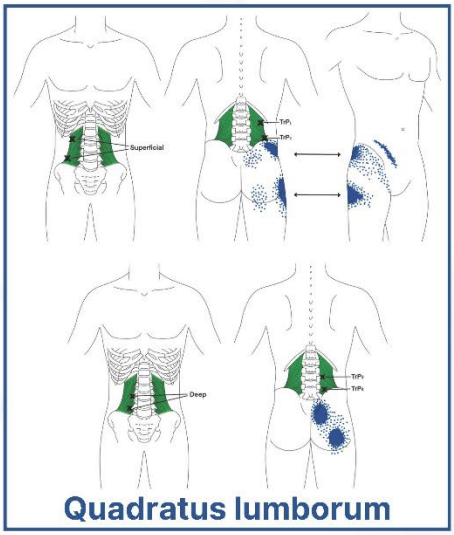
Lower Back Protocol

Left, right, or bilateral. Each muscle has a few TrPs and all of them are treated.

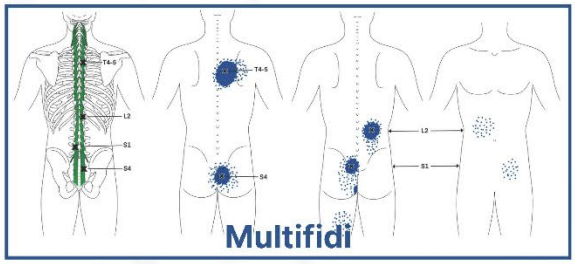
1 - Lumbar paraspinals
2 - Quadratus lumborum
3 - Piriformis
4 - Gluteus medius
5 - Gluteus minimus
6 - Gluteus maximus



Lumbar paraspinals



Quadratus lumborum



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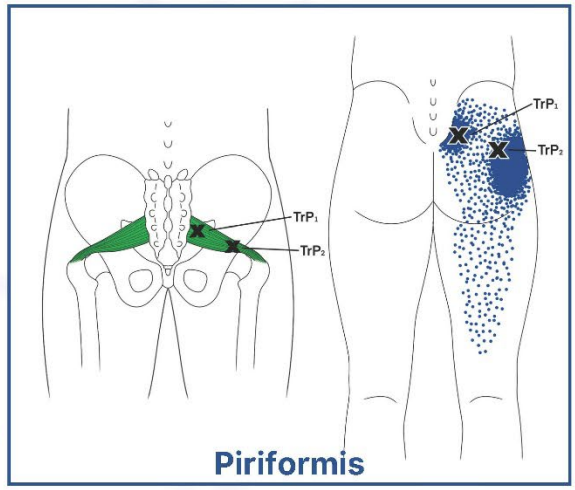
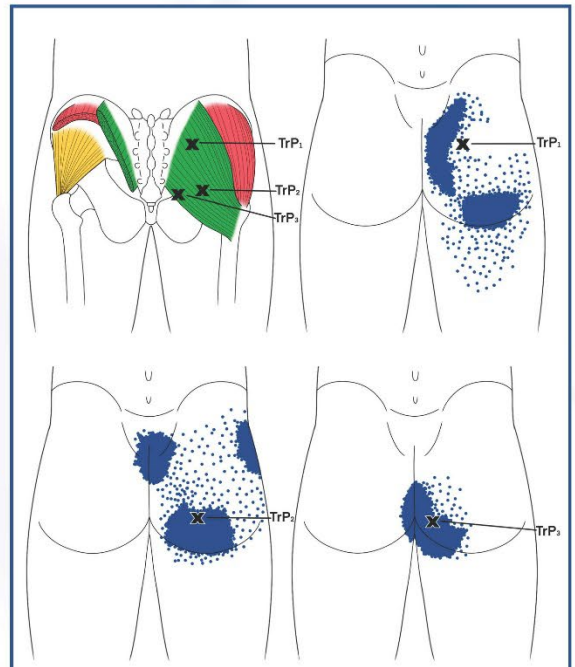
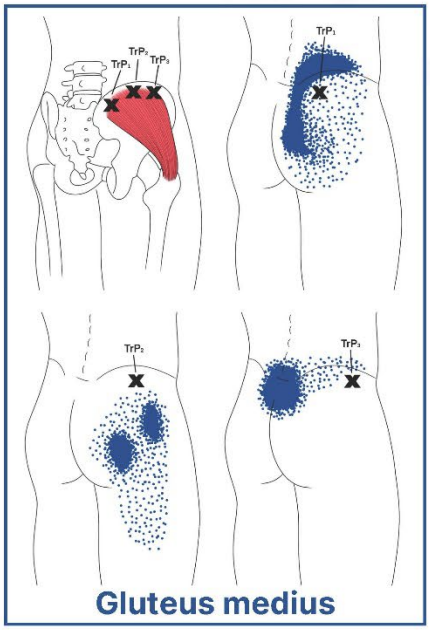


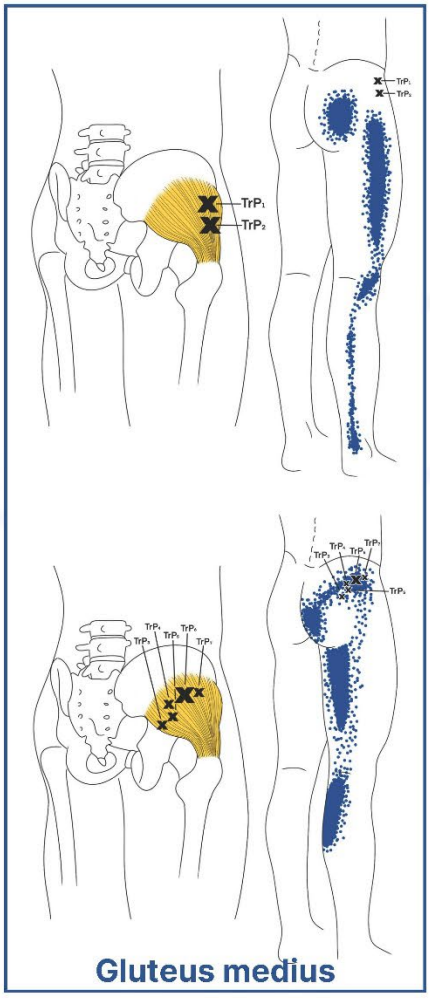
Piriformis



Gluteus maximus



Gluteus medius

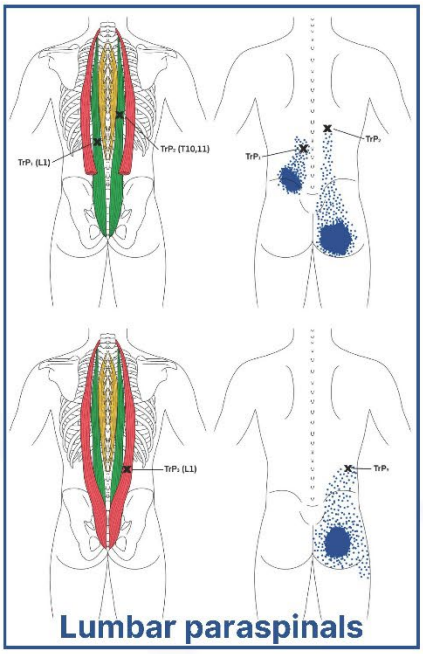


Gluteus medius

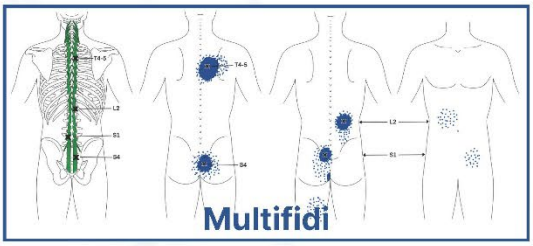
Knee Protocol

Left, right, or bilateral. Each muscle has a few TrPs and all of them are treated.

1 - Lumbar paraspinals
2 - Quadratus lumborum
3 - Piriformis
4 - Gluteus medius
5 - Rectus femoris
6 - Vastus medialis/lateralis
7 - Medial gastrocnemius



Lumbar paraspinals



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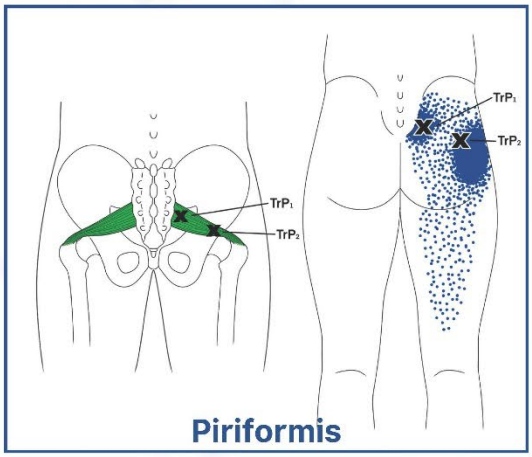
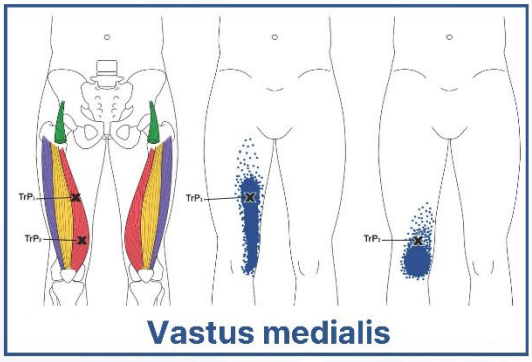
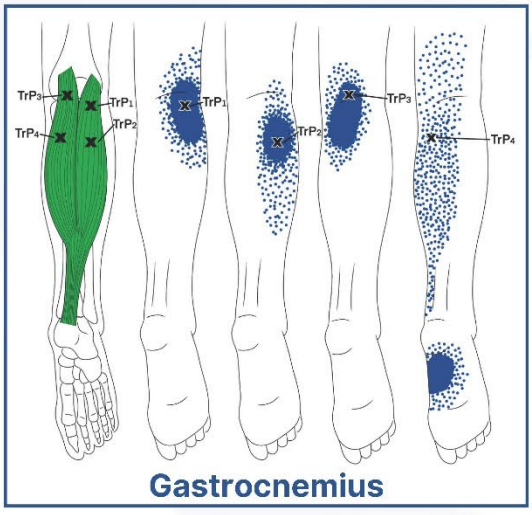


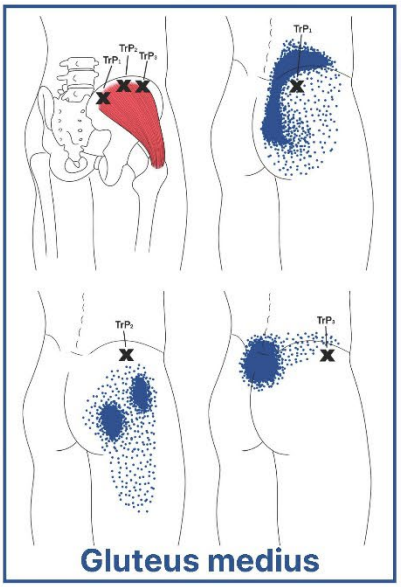
Piriformis



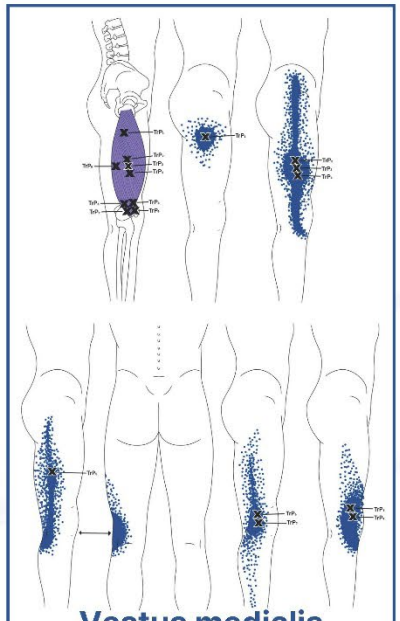
Vastus medialis



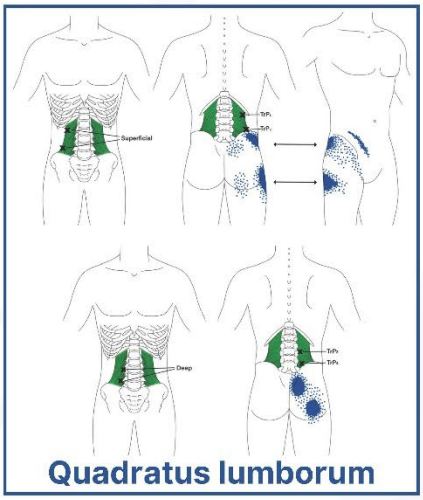
Gastrocnemius



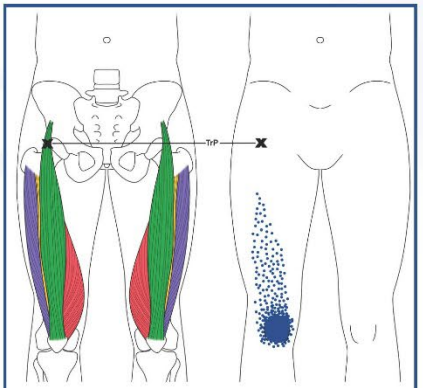
Gluteus medius



Vastus medialis



Quadratus lumborum

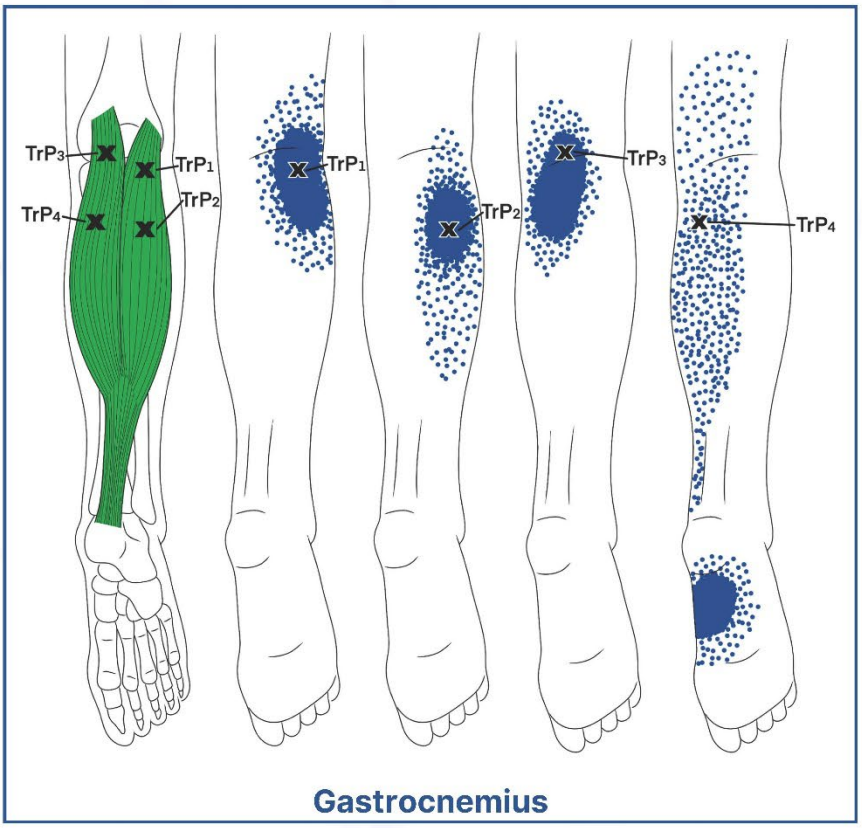


Rectus femoris

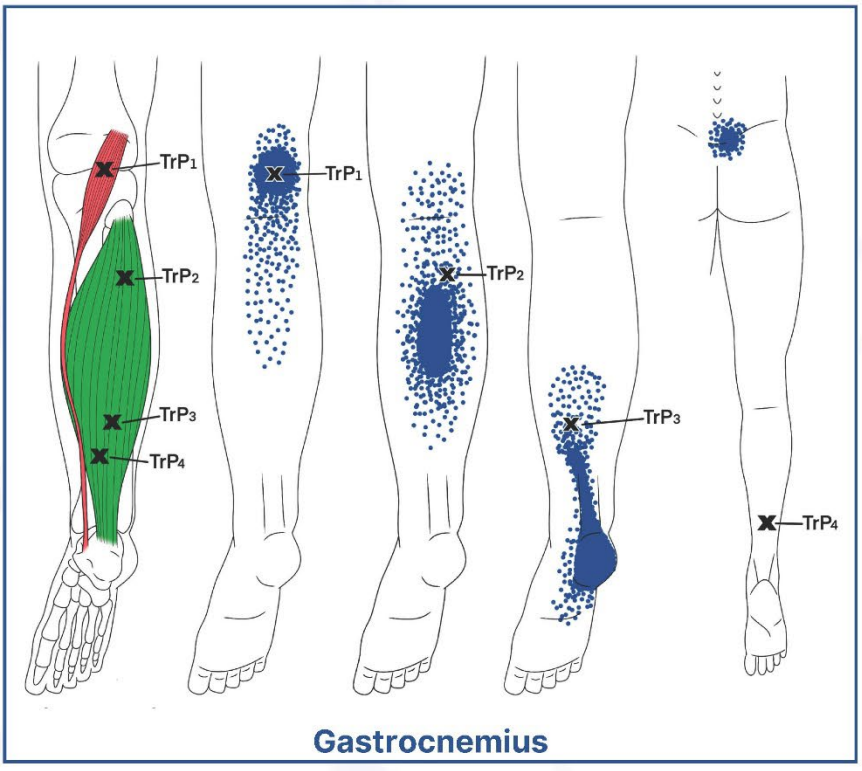
Lower Leg Protocol

Left, right, or bilateral. Each muscle has a few TrPs and all of them are treated.

1 - Medial gastrocnemius
2 - Soleus



Gastrocnemius

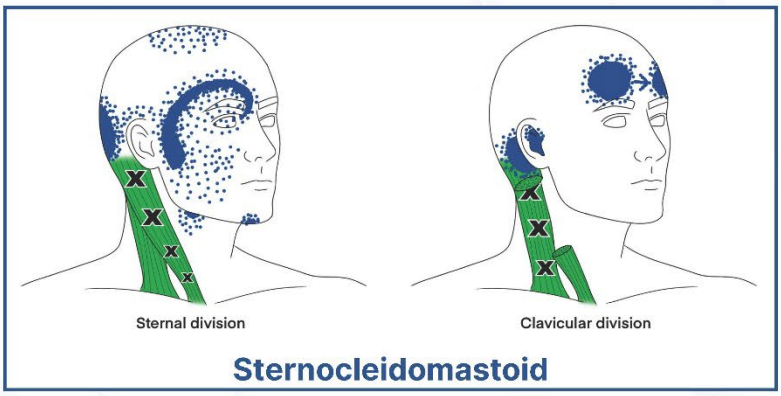


Gastrocnemius

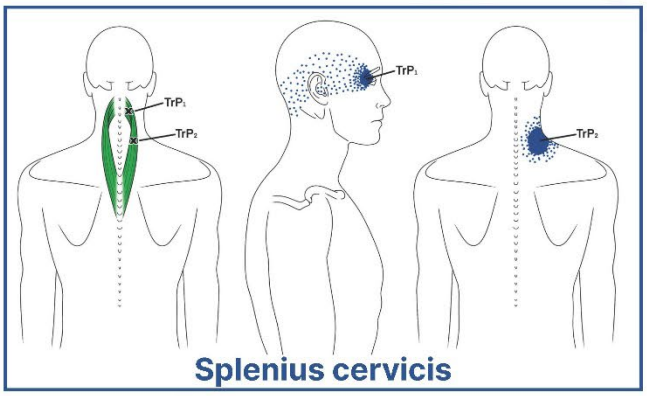
Back and Neck Protocol

Left, right, or bilateral. Each muscle has a few TrPs and all of them are treated.

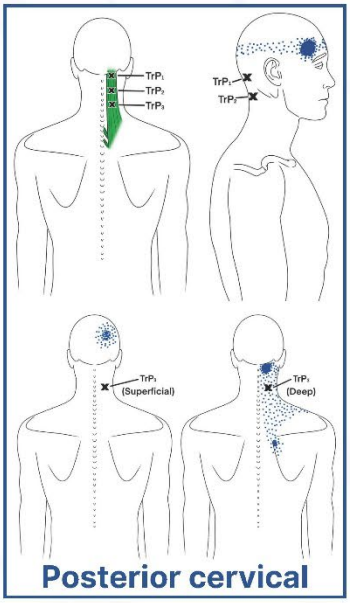
1 - Cervical paraspinals
2 - Trapezius,
3 - Rhomboids/Levator scapula,
4 - Lower trapezius



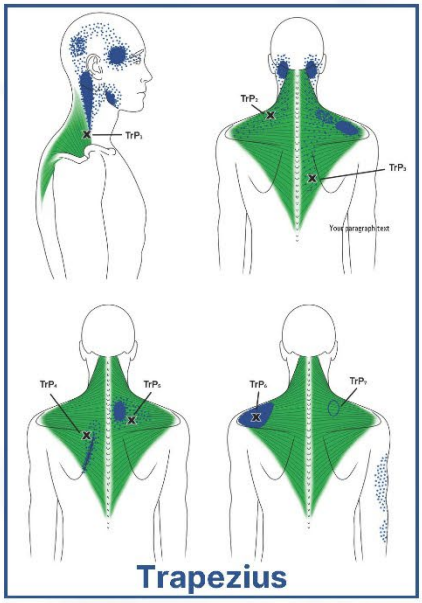
Sternocleidomastoid



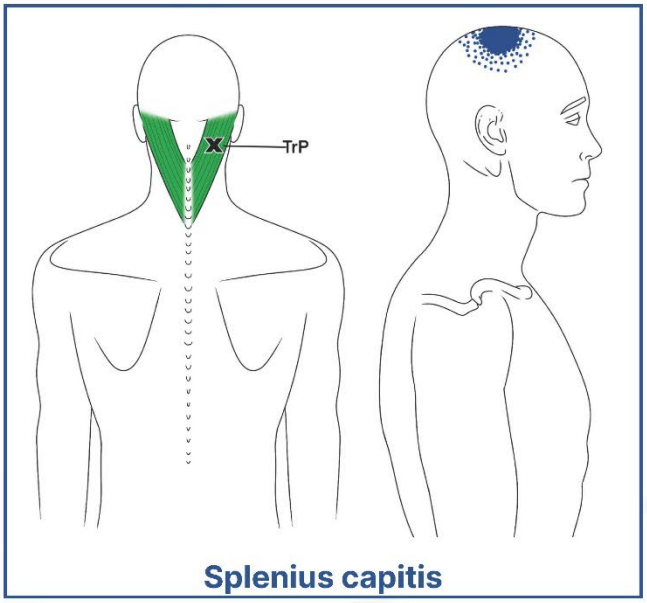
Splenius cervicis



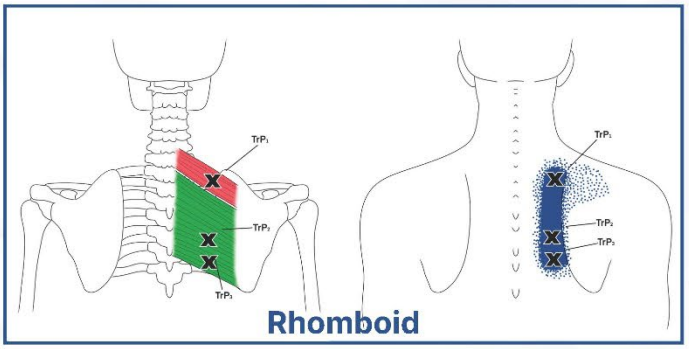
Posterior cervical



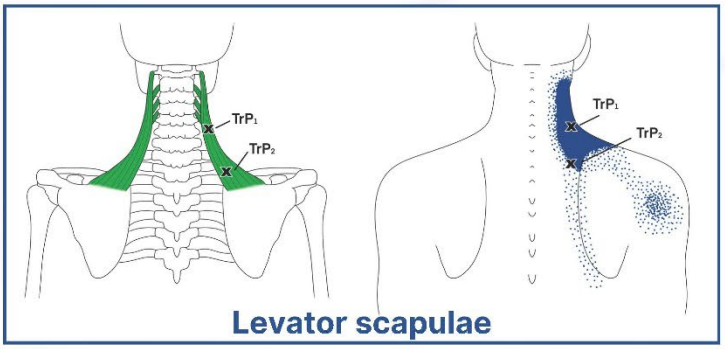
Trapezius



Splenius capitis



Rhomboid

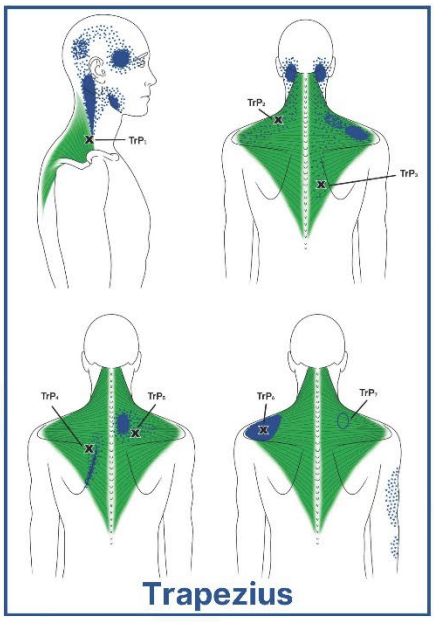


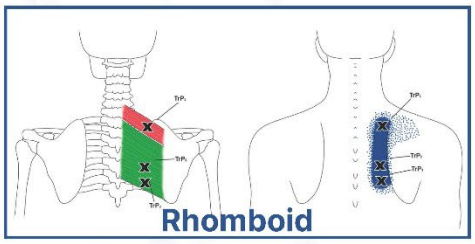
Levator scapulae

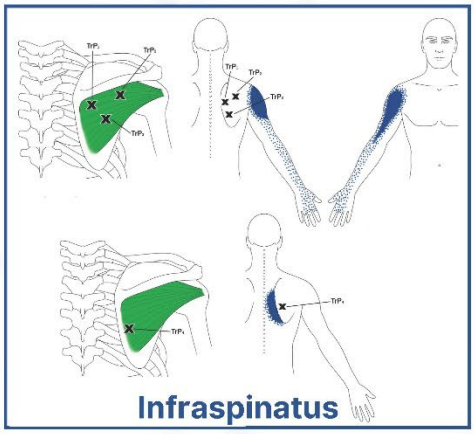
Shoulder Protocol

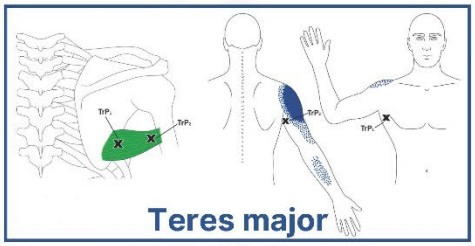
Left, right, or bilateral. Each muscle has a few TrPs and all of them are treated.

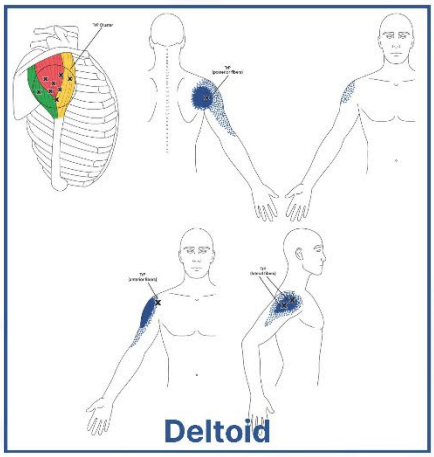
1 - Trapezius
2 - Rhomboids
3 - Lower trapezius
4 - Infraspinatus
5 - Supraspinatus
6 - Teres major
7 - Deltoid
8 - Subscapularis

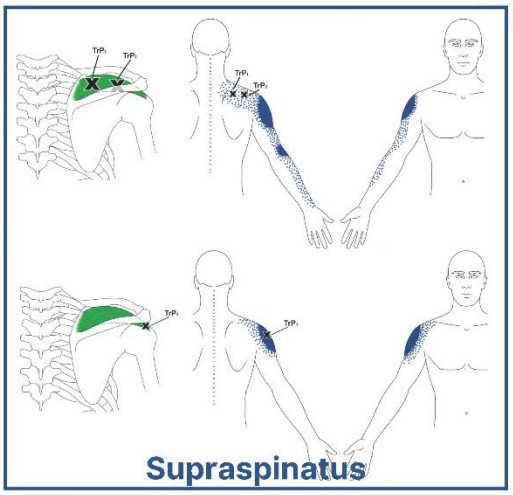


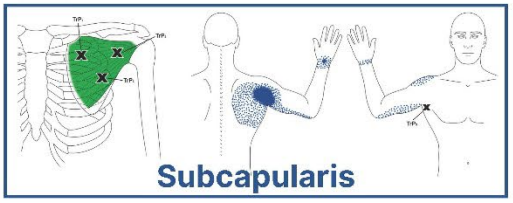


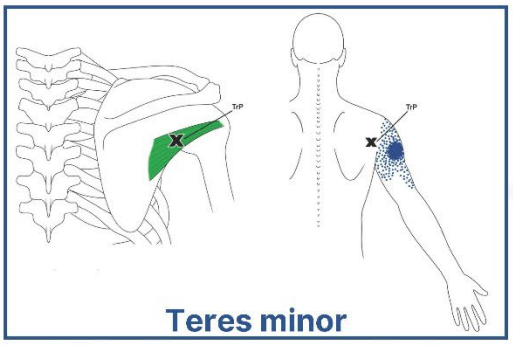








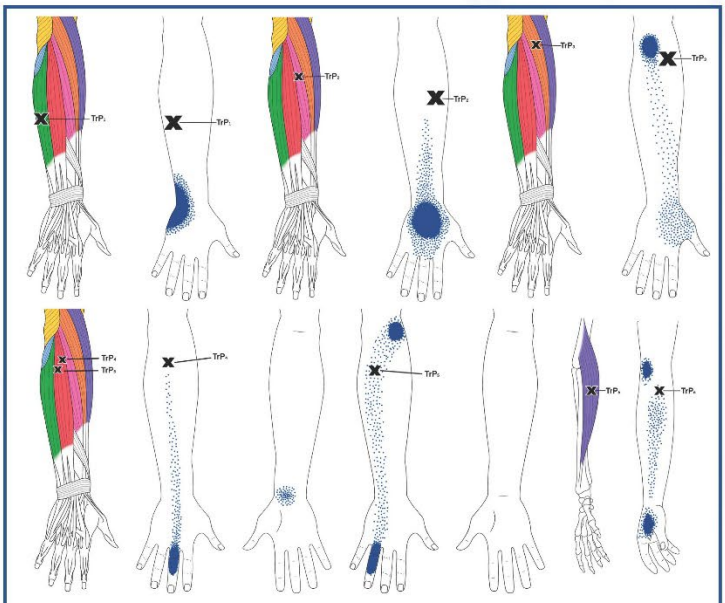




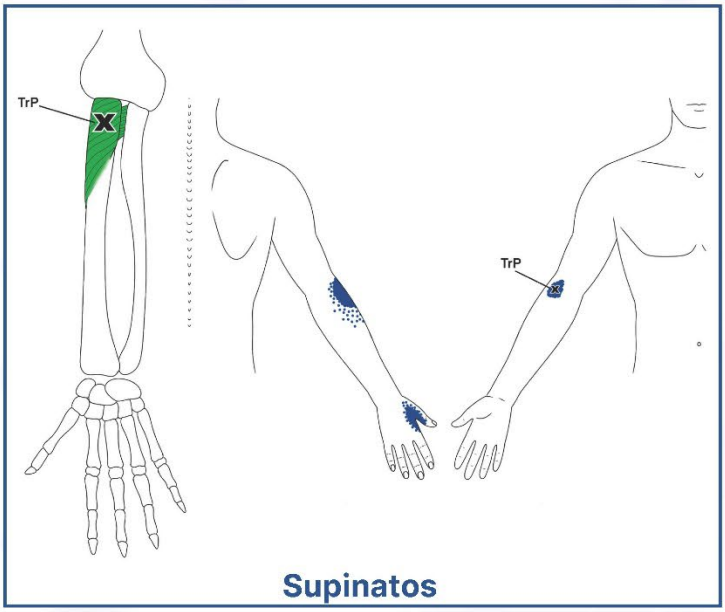
Elbow Protocol

Left, right, or bilateral. Each muscle has a few TrPs and all of them are treated.

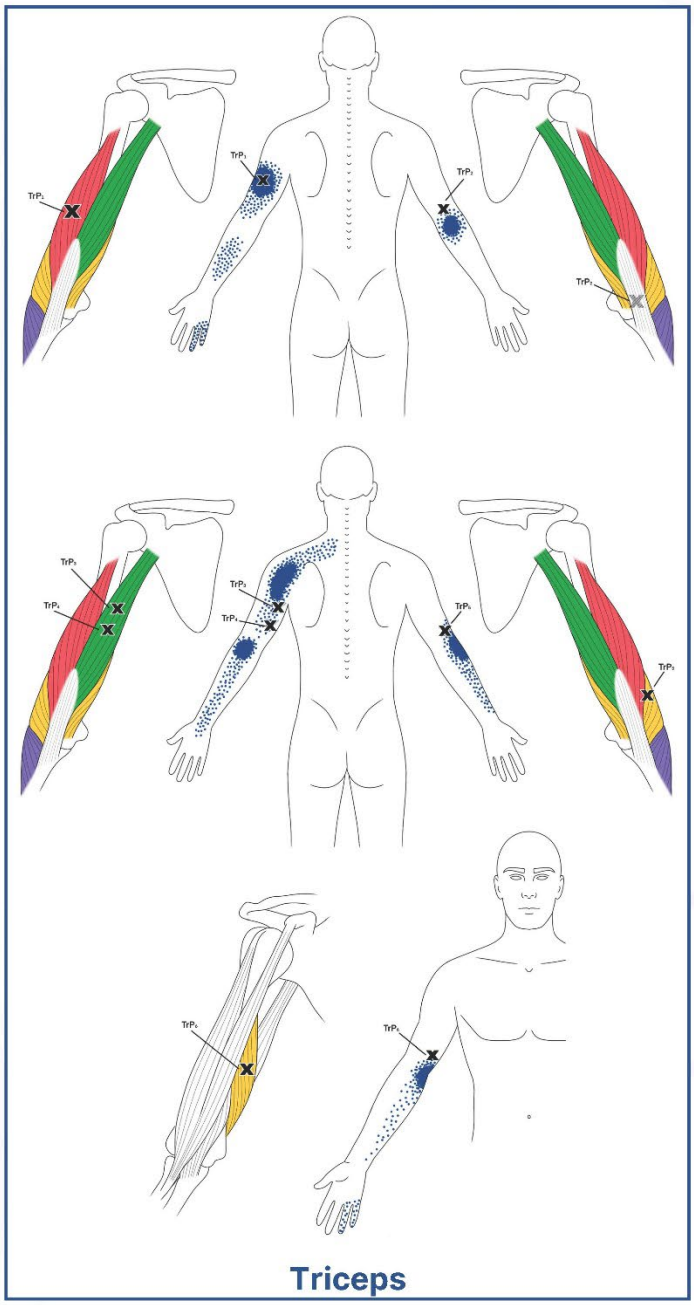
1 - Brachioradialis
2 - Extensor carpi radialis longus
3 - Supinator
4 - Triceps



Extensors of the hand



Supinatos



Triceps