Academy of PHYSICAL MEDICINE

TRIGGER POINTS 3D

The Language of Touch
(A Trigger Point Thesaurus)

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WHAT WE WILL BE EXPLORING
Second in a series of workshops

- The Head and Neck
- Whiplash Associated Disorder
  - Longus Colli
  - Spleneus Capitis
  - Spleneus Cervicis
- The Case History
- Trigger Points 101
- Greater Occipital Neuralgia
- Conclusions
- Next workshops

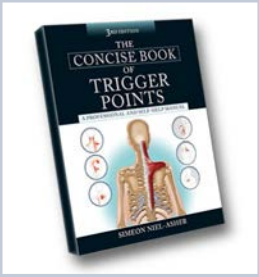
Why Me?

About Me

- Osteopath since 1992
- Using trigger point interventions since 1990
- Amazing teachers and mentors on my journey

Trigger Point Therapy

- Like to play and invent
- Special interest in FSS since 1997
- Shoulder hold deep secrets
- NAT - Body adopts holding patterns around injury
- NAT - deliberately uses painful touch - nociceptive pain algorithms as
- NAT - views pain as an Input
- NAT - causes changes at level of – reflexes such as PIR, RI and proprioceptive mechanisms



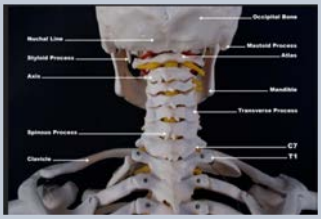
Whiplash Associated Disorder (WAD)

- The estimated annual economic cost (2016) related to motor vehicle crashes is $242 billion in the USA and €180 billion in Europe.
- WAD is associated with an increase in healthcare costs, reduced work productivity, lost earning capacity, socioeconomic costs and time contributed by caregivers. For example, within the first 2 years after a whiplash injury, employment propensity declined by 20–25%.
- Approximately 60% of patients with WAD progress to chronicity with up to 30% experiencing moderate to severe pain and disability, leading to an decrease in quality of life. The incidence of WAD is widely variable in the literature. In the US, it is estimated at 4 per 1,000 persons.
- Can also occur during sport (skiing, boxing, diving, snowboarding) or after falls.
- Classified as acute or chronic;
  - In acute whiplash, symptoms last 2-3 months,
  - while in chronic whiplash symptoms last longer than three months.
- Patients with acute WAD experience widespread pressure hypersensitivity and reduced cervical mobility. Demonstrate both peripheral and central sensitization.
- It is estimated that 85% of of people recover within 6 months. It is estimated that about 30% to 50% of patients who sustain a symptomatic whiplash injury will report chronic and potentially more widespread symptoms.
- The trauma of whiplash affects bony and soft-tissue structures often causing macro and micro traumata (whiplash injury).
- Over time this may lead to a variety of clinical manifestations called Whiplash Associated Disorders (WAD).
- It has also been suggested that chronic WAD may affect cognitive impairment, divided attention, and speed of information processing may be affected.

Time Vs. Whiplash

Affected Structures

- **Bones:** Atlas, Axis, vertebrae (C3-C7)
- **Spinal Joints:** zygapophyseal joints, Atlanto-axial joint, Atlanto-occipital joint
- **Adjacent joints:** Temporomandibular joint, thoracic spine, ribs, shoulder complex
- **Muscles:** Sterno-Cleido-Mastoid (SCM), scaleneii, Longus Colli, Trapezius, Longissimus Thoracis, Spleneus Capitis, Spleneus Cervicis, Semispinalis Capitis
- **Ligaments:** Alar ligament, Anterior atlanto-axial ligament, Anterior atlanto-occipital ligament, Apical ligament, Anterior longitudinal ligament, Transverse ligament of the atlas
- **Intervertebral discs** and cartilaginous endplates
- **Vascular system structures:** internal carotid and vertebral artery
- The peripheral vestibular system
- **Nervous systems structures:** nerve roots, spinal cord, brain, sympathetic nervous system



Quebec Task Force – Whiplash associated disorder (QTF-WAD)

The Quebec task force (QTF) defined whiplash as "bony or soft tissue injuries" resulting "from rear-end or side impact, predominantly in motor vehicle accidents, and from other mishaps" as a result of "an acceleration-deceleration mechanism of energy transfer to the neck". Approximately 93% of patients are classified as WADII (UK).

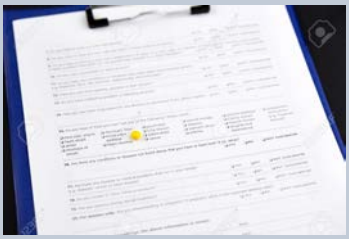
- **WAD 0:** No complaints
- **WAD I:** Neck: complaint of pain, stiffness or tenderness only. No physical signs
- **WAD II:** Neck complaint AND musculoskeletal sign(s). Decreased Range of Motion (ROM), muscle point tenderness
- **WAD III:** Neck complaint AND neurological sign(s), reduced deep tendon reflexes (DTR'), weakness, sensory deficit
- **WAD IV:** Neck complaint AND fracture or dislocation

What Are the Symptoms of Whiplash Injury?

- Neck pain and/or stiffness 92%
- Headache 57%
- Fatigue 56%
- Shoulder pain 49%
- Anxiety 44%
- Pain between the shoulder blades 42%
- Low back pain 39%
- Sleep disturbance 39%
- Numbness of the arm 30%
- Sensitivity to noise 29%
- Difficulty concentrating 26%
- Blurred vision 21%
- Irritability 21%
- Difficulty swallowing 16%
- Dizziness 15%
- Forgetfulness 15%
- Pain in the arm 12%
- Weakness in the arm 6%
- Ringing in the ears 4%
- Pain in the jaw or face 4%

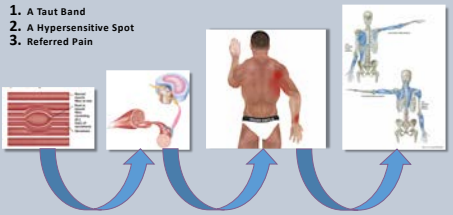
The Case History & Medico Legal Aspects

- Date
- Time of day
- Weather conditions
- Make of car
- Make of other car
- What happened
- Hospital or Dr. ?
- Symptoms?
- Who/what/where
- Legal Claim Considerations



Trigger Points Overview

1. **A Taut Band**
2. **A Hypersensitive Spot**
3. **Referred Pain**

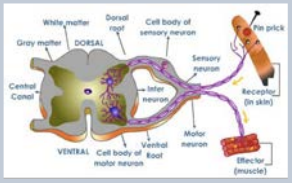


Trigger Points warp sensory perception

Trigger Points and Touch
exquisite local pain, connects to self & powerful ANS connections

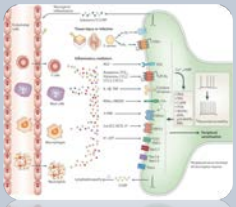
Trigger Points and WAD

- Trigger points may play a hugely important role in perpetuating and also relieving the symptoms of WAD
- Peripheral and central sensitization
- Nociceptive drive
- Dorsal Horn Wind-up

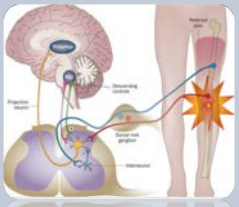


Sensitization – Increasing the burden of nociceptive input

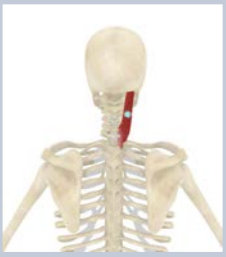
Peripheral – 2 to 5 segments



Central - Windup



CGH - HEADACHE



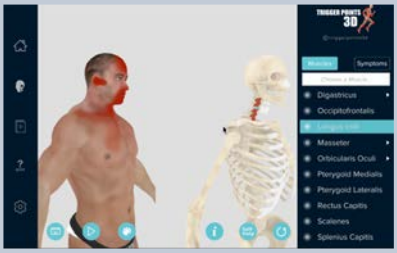
- Muscular problems and tension are commonly associated with TTH and CGH trigger points within muscles may either be causative or may perpetuate
- The most commonly affected muscles are: Spleneus Capitis, Spleneus Cervicis and the Sub Occipitals
- There is also a strong association with postural issues such as the upper crossed pattern.
- The pain processing part of the central nervous system is almost certainly involved in TTH and CGH as it shows up abnormal in fMRI scans.

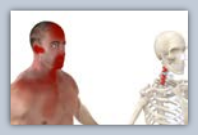
The Longus Colli Muscle

The Longus Colli muscle is sometimes regarded as the 'Psoas of the neck', it is intimately connected with whiplash where it often manifests trigger points. Here are some of the symptoms associated with Longus Colli trigger points:

- **Posterior & anterior neck pain and tenderness**
- **Temporal area pain**
- **Motion limitation of the neck**
- **Dry mouth**
- **Sore throat**
- **Persistent tickle in the throat**
- **Dysphagia**
- **Odynophagia**

The Longus Colli Muscle

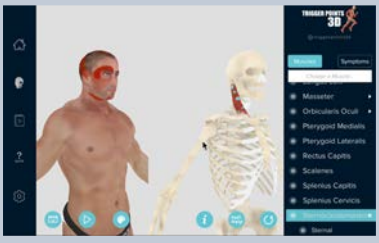




The Sternocleidomastoid Muscle

- Contraction of both sides together: flexes neck and draws head forward, as in raising head from a pillow. Raises sternum, and consequently ribs, superiorly during deep inhalation.
- Contraction of one side: tilts head toward same side. Rotates head to face opposite side (and also upward as it does so).
- Stiff neck, atypical facial neuralgia, hangover headache, postural dizziness, altered SNS symptoms to half of face, lowered spatial awareness, ptosis. Associated with (existing) persistent dry, tickling cough, sinusitis and chronic sore throats, increased eye tearing and reddening, popping sounds in the ear (one sided), balance problems, and veering to one side when driving.

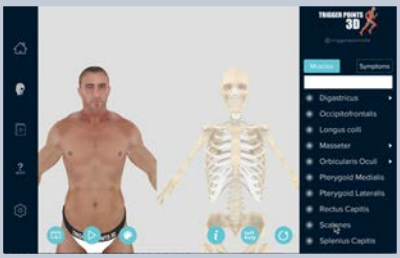
The Sternocleidomastoid Muscle



The Scaleneii Muscles

- An extensive and profound set of pain maps, the scalenes respond spectacularly well to a range of trigger point interventions. It always checking the ipsilateral pectoralis minor for trigger points as well.
- Back/shoulder/arm pain, thoracic outlet syndrome, scalene syndrome, edema in the hand, phantom limb pain, asthma, chronic lung disease, whiplash, "restless neck," irritability, hyperventilation syndrome, panic attacks.

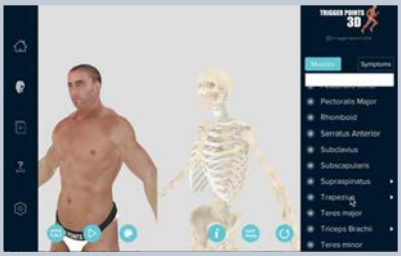
The Scaleneii Muscles



The Trapezius Muscle

- Trapezius is the most superficial of the back muscles. It domes forward in its upper portion with trigger points often developing in the anterior upper fibers. It is interesting to note how the Trapezius Pain Map incorporates several others such as SCM and Levator Scapulae.
- Chronic tension and neck ache, stress headache, cervical spine pain, whiplash, tension/cluster headache, facial/jaw pain, neck pain and stiffness, upper shoulder pain, mid-back pain, dizziness, eye pain, emotional stress, depression.

The Trapezius Muscle

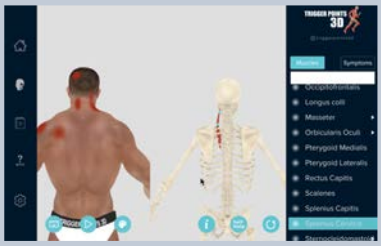


The Longissimus Thoracis: Erector Spinae Muscle

The Spleneus Cervicis Muscle

- Acting together with spleneus cervicis this muscle is a key one for headache pain, especially with patients with cervical disease such as spondylosis or spondylarthrosis. It's WELL WORTH learning to find this muscle as it is a blessing for patients once relieved of trigger points.
- Headache, neck pain, eye pain, blurred vision (rare), whiplash, pain from draught, postural neck pain (occupational), "internal" skull pain, neck stiffness, decreased ipsilateral rotation.

The Spleneus Cervicis Muscle



The Spleneus Capitis Muscle

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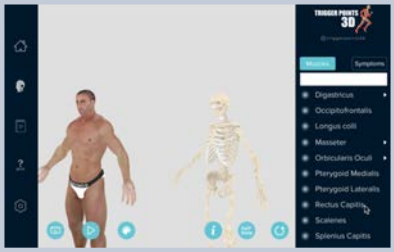
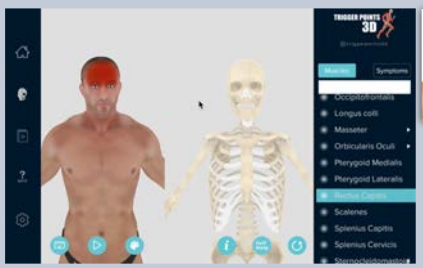
The Spleneus Capitis Muscle



The Rectus Capitis Muscle

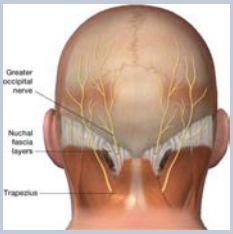
- A plethora of small spinal muscles is utilized to make minute adjustments in the upper cervical vertebrae including the rectus capitis.
- Severe migraine-type pain everywhere inside the head. Ocular hypersensitivity to light - photophobia, difficulty concentrating. Numbness, tingling and burning in the scalp. Tension type (TTH) and Cervicogenic (CGH) Headache.

The Rectus Capitis Muscle



Greater Occipital Neuralgia – G.O.N.

- GON is considered the most frequent neuropathy.
- Also called C2 neuralgia, Arnold neuralgia, or occipital neuritis
- First described by Beruto and Lentijo and Ramos in 1821, who defined a 'disabling alteration characterized by recurrent headaches located in the occipital region'.
- "Unilateral or bilateral paroxysmal pain, of lancinating or acute nature that is located in the posterior part of the scalp in the distribution of the major, minor and third occipital nerves.



G.O.N. & Trigger Points

Lecture Series – Academy of Physical Medicine

- **The Language of Touch**
  - A Trigger Point Thesaurus
- **Face, Head and Neck Pain**
  - Greater Occipital Neuralgia (GON)
  - Whiplash Associated Disorder (WAD)
- **Shoulder and Upper Arm Pain**
  - Rotator Cuff Syndromes (RCT)
  - Sub Acromial Pain Syndrome (SPS) (RCT)
- **Forearm and Hand Pain**
  - Lateral Epicodylalgia - The Tennis Elbow
  - Carpal Tunnel Syndrome
  - Pronator Teres Syndrome
- **Torso and Spine Pain**
  - T4 Syndrome
  - Spondylolisthesis
- **Lumbo-Pelvic Pain**
  - The SI and the Sacrotuberous ligament
  - Sciatica and the piriformis
- **Knee and Foot Pain**
  - Runners Knee
  - Achilles Tendinopathy
  - Planter Fasciitis/Heel pain
- **Chaos, Vitalism and "Super trigger points"**
  - Trigger points as strange attractors

Refs

Acute Whiplash Injury Study (AWIS): a protocol for a cluster randomised pilot and feasibility trial of an Active Behavioural Physiotherapy Intervention in an insurance private setting

https://bmjopen.bmj.com/content/bmjopen/6/7/e011336.full.pdf