Pearls in Chronic Pain Diagnosis





Conflict of Interest Declaration: Nothing to Disclose

Presenter: Dr. Hadi Shojaei

Title of Presentation:

Pearls in Management of Chronic Pain Syndrome

I have no financial or personal relationship related to this presentation to disclose.



Disclosure

- Conflict of Interest Declaration: Nothing to Disclose
- Speaker: Dr. Hadi Shojaei
- Relationships with commercial interests:
 - I have no financial or personal relationship related to this presentation to disclose

Credentials:

Hadi Shojaei, MD
Physical Medicine & Rehabilitation Specialist (PM&R), CPSO Recognized
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Chronic Pain Consultant at St. Joseph's Care Groupe, Chronic Pain
Management Program (CPMP), and Thunder Bay Regional Health
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Dr. Angela Mailis - Professor, U of T

- Comprehensive Pain Program (CPP) 1982-2014
- Expanded to involve Fellowship funding in 1990
- I was her Clinical Fellow 2010-2012



Dr. John Flannery - Professor, U of T

- Comprehensive Pain Program (CPP) 2014-2016
- Move to TRI Jan 2016 & rebranded Comprehensive Integrated Pain Program (CIPP)
- I was his Clinical Fellow 2016-2018

Learning Objectives

At the end of this presentation, participants will be able to:

- Understand an approach to referral for chronic pain mgn
- Recognize chronic pain in practice and find secret keys in history
- Complete initial diagnostic options including questionnaire
- Identify psychological versus physical components of chronic pain.

Welcome to Pain Cruise

We are going to take an amazing trip today,

LOOK AT THIS!





Chronic pain (most often identified as chronic noncancer pain or CNCP) arises from a multiplicity of heterogeneous and overlapping pain conditions together with influences from psychosocial and environmental factors.

Chronic Pain:

Multiplicity of heterogeneous and overlapping pain conditions together with influences from psychosocial and environmental factors.



Chronic Pain

Multiplicity of heterogeneous and overlapping pain conditions together with influences from psychosocial and environmental factors.

We are not talking about:

Definition, Pathophysiology of chronic pain, but a little of Pain Processing system



Risk factors of Chronicity

Intensity of the inciting factor

Memory of Pain

Coping skills, Behaviours, Attitudes and Belief

Compensation process/problem

Employment

Legal issues

Coincidences, comorbidities

Psychiatric problems like PTSD

- Pain Nociceptors, Dorsal horn, Spinothalamic Tract, Thalamus(Relay Station): 1-the somatosensory cortex (responsible for Perception of Pain), 2-the frontal cortex (in charge of thinking), 3-the limbic system (linked to emotions and memory)
- HOW YOU FEEL PAIN: THE PAIN PATHWAY Somatosensory cortex Frontal cortex Limbic system Spinal cord Thalamus Peripheral nerve **Epidermis** Dermis Pain receptor Pain receptors (nociceptors) in the skin are activated
 - 1 by tissue damage.
- A signal travels up the peripheral nerve to the spinal 2) cord.
- Within the spinal cord, chemical messengers (neurotransmitters) are released. These activate other nerves that pass signals to the brain.
- The thalamus relays the signals on to the somatosensory cortex (sensation), frontal cortex (thinking) and limbic system (emotional response).

Pain relies on context

- Sensory cues need to be evaluated by your brain including
- Memory
- Reasoning =cerebral cortex
- Emotional

A minor finger injury in a violinist or a dancer. If someone tickles you...

(amygdala= basic emotions: sex, anger, fear. larger in male brain)
 (hippocampus=memory)(orbitofreontal=social emotional response)x,
 anger(prefrontal=executive and logical)(frontal=planning)(anterior
 cingulate=motivation)(parietal=movement)(temporal=language)e s(brain
 stem= heat, breathing, digesting, sleeping)(cortex= state of consciousness,
 senses, motor skills, reasoning, language)(hypothalamus= blood pressure,
 body temperature, weight, appetite)

Central Sensitization (for your own review)

• The central nervous system adapts adversely to repetitive pain impulses after prolonged stimulation of nociceptors, causing nervous system's architecture and thereby pain processing change. When spinal neurons are subjected to repeat or high-intensity nociceptive impulses, they become progressively and increasingly excitable even after the stimulus is removed. This condition is known as central sensitization or wind-up phenomenon and leads to nonresponsive or chronic intractable pain.

Central Sensitization (for your own review)

- Wind-up is the culmination of two distinct phases of change in the nervous system: First, pain-transmitting nerve fiber threshold is reset. This resetting results in hyperalgesia, where less and less stimulation is required to initiate pain. Second phase: nerve fibers that normally carry non painful information are recruited and become part of the pain-transmission process. This phase is termed allodynia and results in normally harmless sensations being interpreted as pain. The presence of hyperalgesia and allodynia collectively is considered wind-up phenomenon.
- This phenomenon highlights the need for preemptive analgesia to treat pain before it begins and at regular intervals postoperatively.

wind-up (for your own review)

- Steady release of substance P in the dorsal horns, removed Slowly and diffuse around, lead to cellular changes such as increased neuronal sprouting.
- Other cellular changes might follow from activation of NMDA receptors which only open with prolonged depolarization, such as prolonged pain. The resulting influx of Ca++ could activate enzymes (such as nitric oxide synthase) or trigger other long lasting cellular changes, functionally and physically.

CNS Changes (for your own review)

- Pain inhibition; Descending neural inhibitory control (5HT, NA, EnK, ...)
- Spinal Changes: wide dynamic range neuron (WDR) neurons prioritize pain signals; Ephaptic crosstalk occur; Interneurons opioid receptors downgrade; Reduced activity of Diffuse Noxious Inhibitory Controls (DNIC)
- Brain Changes: regions, not previously involved, are now recruited, brain volume lost, central glial cells become activated

(from Dr. Marks De Chabris' slides last year)

The gate theory of pain (for your own review)

It says that as these pain messages come into the spinal cord before they even get to the brain, they can be

- amplified,
- turned down
- or even blocked out.

There are many accounts of how people injured on the battlefield or in sports games don't feel any pain from their injuries until afterwards. This has to do with the brain being busy doing other things and shutting the gate until it can pay attention to the messages.

For example: Large diameter nerve fibres (A-beta fibres) responsible for transmitting signals of touch to the brain have the ability to close the pain gate and so block signals from other smaller diameter nerve fibres which transmit pain.

• A child falls over and hurts her knee, she rubs her knee, the signal from that sensation of touch temporarily blocks the pain signal travelling from the injured knee to the brain.



The highest peak in <u>Iran</u>,

DAMAVAND

Chronic pain syndrome

Sleep

Bowel movement

Bladder

Fatigue

Libido

Tinnitus

Headaches

Weight

Memory/concentration

Sensation

What is your pain related diagnosis? Please draw on the body diagram all areas you experience pain. Draw an X on the area that bothers you the most: Is the pain:

Always there

Comes and goes Is there a time of day when the pain gets worse? □ Yes - When: □ Morning □ Afternoon □ Evening □ Bedtime □ Overnight What does your pain feel like? Check all that apply: Splitting Gnawing Throbbing Tiring/Exhausting D Hot/Burning Shooting Sickening Stabbing D Aching Fearful o Heavy □ Sharp Punishing/Cruel Tender Cramping What makes this pain worse? (e.g. sitting too long, bad weather, bending over, etc...) What makes this pain better? (e.g. exercise, hot packs, medication, etc...) Is the pain:

Getting worse Getting better Staying about the same Is your pain affected by stress/mood? □ No □ Yes

• Brief Pain Inventory (BPI)

1903 PLEASE USE BLACK INK PE	_	Date: (mo Subject's In Study Sub	iject #:	(day)	(year)	Pi Pi Re	rvision: 07/	01/05	
- Thurwah					Invent	•			
					ain trom hese ever				headaches, sprains, and
Yes	☐ No								
2. On the d	ıagram, s	shade in t	he areas	where yo Front	u feel pai	n. Putan	X on the Back		hurts the most.
			Right	A	Let	Lef	$\overline{}$	Right	
				\ \ \ \	}				
			• (4	W	W.			
				Ш			W		
	rate you ast 24 ho		marking t	he box b	eside the	number t	hat best (describes	your pain at its worst
☐ 0 No Pain	1	2	_ 3	_ 4	□ 5	□6	7	8	9 10 Pain As Bad As You Can Imagine
		ur pain b st 24 hou		ng the bo	x beside	the nun	ber that	best des	scribes your pain at its
□ 0 No Pain	<u> </u>	_ 2	<u> </u>	_ 4	5	<u> </u>	7	□ 8	9 10 Pain As Bad As You Can Imagine
5. Please	rate you	pain by	marking t	he box b	eside the	number t	hat best o	lescribes	your pain on the average.
☐ 0 No Pain	<u> </u>	_ 2	_ 3	□ 4	□ 5	□ 6	□ 7	8	9 10 Pain As Bad As You Can Imaging
6. Please	rate you	pain by	marking t	he box b	eside the	number t	hat tells i	now much	pain you have right now.
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Bogo 1	of O			Copyrig	int 1991 Cha		and, PhD		

• Brief Pain Inventory (BPI)

1903 SE USE INK PEN		(month ject's Initia	ls :	/ (ye	ear)	Protocol PI:	#:			
7. What t	reatme	ents or m	edications	s are you	receivin	g for your	pain?			
			ow much e percenta							
0% 10 No Relief)% 	20%	30%	40%	50%	60% 	70% 	80%		100% Complete
9. Mark to with yo		beside th	e number	that descr	ibes how	, during th	e past 24	hours, pai	n has inte	rfered
A. Geno	eral A	ctivity	□ 3	4	<u> </u>	□ 6	□ 7	□ 8	<u> </u>	1 Comple
B. Moo 0 Does Not nterfere	d 1	<u> </u>	□3	□ 4	<u> </u>	□ 6	_ 7	□8	□9	10 Comple
C. Walk 0 0 0 0 0 0 0 0 0 0 0 0 0	cing al	bility	□ 3	□ 4	<u> </u>	□ 6	7	□8	<u> </u>	10 Complete
D. Norr 0 Does Not nterfere	nal W	ork (inc	ludes bo	oth work	outside	e the ho	me and I	nousewo	ork) 9	1 Comple
E. Rela 0 Does Not nterfere	tions 1	with oth	er peop	le □ 4	<u> </u>	□ 6	□ 7	□ 8	□9	1 Comple
F. Slee 0 Does Not nterfere	1	□ 2	□ 3	4	□ 5	□ 6	7	□ 8	□ 9	10 Comple Interfere
G. Enjo 0 Does Not	ymen 1	t of life	□3	_ 4	□ 5	□ 6	_ 7	8	<u> </u>	1

Pain stage of Change Questionnaire

PSCQ

A-Pre-Contemplative

B-Contemplative

C-Action

D-Maintenance

• GAD-7

Total score for the seven items ranges from 0 to 21. Scores of 5, 10, and 15 represent cut points for mild, moderate, and severe anxiety, respectively.

Using the threshold score of 10, the GAD-7 has a sensitivity of 89% and a specificity of 82% for generalized anxiety disorder.

Generalized Anxiety Disorder 7-item (GAD-7) scale

Over the last 2 weeks, how often have you been bothered by the following problems?	Not at all sure	Several days	Over half the days	Nearly every day		
1. Feeling nervous, anxious, or on edge	0	1	2	3		
2. Not being able to stop or control worrying	0	1	2	3		
3. Worrying too much about different things	0	1	2	3		
4. Trouble relaxing	0	1	2	3		
5. Being so restless that it's hard to sit still	0	1	2	3		
6. Becoming easily annoyed or irritable	0	1	2	3		
7. Feeling afraid as if something awful might happen	0	1	2	3		
Add the score for each column	+	+	+			
Total Score (add your column scores) =						

If you checked off any problems, how difficult have these made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at all	
Somewhat difficult	
Very difficult	
Extremely difficult	

• PHQ-9

Depression Severity:

0-4 none,

5-9 mild,

10-14 moderate,

15-19 moderately severe,

20-27 severe.

Validity has been assessed against an independent structured mental health professional (MHP) interview.

PHQ-9 score ≥10 had a sensitivity of 88% and a specificity of 88% for major depression.

Patient Health Questionnaire (PHQ-9)

Over the last 2 weeks, how often have you been bothered by any of the following problems?	Not at all	Several days	More than half the days	Nearly every day
Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself – or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed? Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3
For office coding: Total Score	ė =	=	+	
f you checked off any problems, how difficult have these problems made it for yo or get along with other people?	u to do your	work, take o	care of thing	s at home
☐ Not difficult at all ☐ Somewhat difficult ☐ Very difficult	cult	Extrem	ely difficult	

• IEQ

A 12-item scale that asks respondents to indicate the frequency with which they experience different thoughts concerning the sense of unfairness in relation to their injury on a 5-point scale with the endpoints (0) never and (4) all the time.



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IEQ

Name:		Age:	Gender: _	Date	e:		
	nappen, they can l ur injury has affec		ffects on our lives	This scale was	designed to		
experience wh	re twelve statemer en you think about experience these	t your injury. Usi	ng the following so	cale, please indi	cate how		
0 – never	1 – rarely	2 – someti	mes 3	– often	4 – all the tim		
,[Most people	don't understan	d how severe my	condition is.			
2	My life will	never be the san	ne.				
3	I am sufferir	ng because of so	meone else's negl	igence.			
4	No one shou	No one should have to live this way.					
5	I just want to have my life back.						
$_{6}$ \square I feel that this has affected me in a permanent way.							
7	It all seems	so unfair.					
8	I worry that	my condition is	not being taken se	riously.			
9	Nothing will	l ever make up fo	or all that I have g	one through.			
10	I feel as if I	have been robbe	d of something ve	ry precious.			
,, [I am trouble	d by fears that I	may never achiev	e my dreams.			
12	I can't believ	ve this has happe	ened to me.				

... Total

WPI/SSS

> 3 months

1. Left upper region	2. Right upper region	Grade the severity of the symptom*					
Left jaw Left shoulder girdle Left upper arm Left lower arm	Right jaw Right shoulder girdle Right upper arm Right lower arm	Fatigue 0 1 2 3 Waking unrefreshed 0 1 2 3 Cognitive symptoms 0 1 2 3					
3. Left lower region Left hip (buttock, trochanter) Left upper leg Left lower leg	4. Right lower region Right hip (buttock, trochanter) Right upper leg Right lower leg	Have the following symptoms been bothersome in last months? (tick if yes) Headache 1 Abdominal pain 1 Depression 1					
5. Axial region Neck Upper back Lower back Chest Abdomen	TOTAL POINTS: /19 = Widespread pain index	TOTAL POINTS: /12 = Symptom Severity Score					
Fibromyalgia Severity Score = Widespread Pain Index + Symptom Severity (Score /31) Fibromyalgia diagnosis a. Pain and symptom score thresholds WPI≥7 □ PLUS SSS≥5 □ OR							

Native Wild Flowers Thunder Bay





Case

32-y F

Referred for assessment of low back and right shoulder pain

Involved in a motor vehicle accident in September 2015. She was the belted rear-seat, behind the driver, passenger of a Toyota 2009, when she was rear-ended. The car was write-off. She did not lose her consciousness, however she immediately felt headaches, neck, lower back pain and left leg numbness.

She was taken to the hospital and was discharged after a few hours. Her neck and low back pain have gradually worsened despite attending physiotherapy.

Shoulder ultrasound study in 2015 was unremarkable.

Cervical MRI in 2016, mild degenerative changes,

Head MRI in 2017 was unremarkable.

Left hip and lumbosacral MRI in 2016 showed mild degenerative changes, otherwise unremarkable. No EMG/NCS, No TBBS.

Body map, she marked on her lower back, neck, both shoulders and arms, and left leg as sites of her pain.

Pain description: throbbing, sharp, and aching.

Pain Rating: 8/10, fluctuating from 8/10 to 10/10.

She complained of left hand and left leg paresthesiae.

Walking and climbing stairs aggravate her pain, while lying down relieves it.

BPI score was 66/70 (high levels of pain interference).

Pain Stages of Change Questionnaire, very high at the pre-contemplative stage

GAD-7 score was 10 (indicating mild-moderate anxiety)

PHQ-9 was 19 (indicating moderately severe depression),

IEQ was 36 (high levels of perceived injustice).

Past-Medical history: post partum depression after her second child's birth in 2009.

• She was born in XXXX and moved to Canada in late 2014. She has been a house keeper and has two children (10 and 7 years old). She had nightmares and flash backs from the accident and did not drive for 9 months after the accident. She has not seen a psychiatrist. She has a lawyer for the accident and her case is still open.

P/EX: A pleasant young looking female who had no pain behaviour.

Her gait and posture was normal. She was able to stand and walk on heels and tiptoes. Cervical ROM was full but painful. Lumbar forward flexion ROM was limited to the mid-thigh and extension to 10 degrees due to pain. Sitting SLR was negative; however, supine SLR generated back pain at 45 degrees. Shoulder ROM was full bilaterally.

On palpation, she complained of severe tenderness across the neck, mid-thoracic, lumbar spine, and entire left leg.

On strength tests, her right toes dorsiflexion was 4/5 (although she had no complaint of pain or paresthesia across the right foot).

On sensory examination, she reported decreased perception to light touch, pinprick, cold, and vibration across the right side of her body including her face (She stated that she had numbness across the left side of her body until 4 months ago).

Deep tendon reflexes were subdued symmetrically across upper and lower extremities. Plantar reflexes were flexor bilaterally.

History

- Inciting Event
- Mechanism of injury
- MVA
- Legal action?
- Previous treatments

- Impact evaluation, physical and emotional (A pearl), Pain: before the MVA, and how long after the MVA
- Case is open? (A pearl) Closed?
 Lawyer? Expectation?
- Physiotherapy, Chiropractic, Osteopathy, Acupuncture, Massage Therapy, Occupational therapy, Intervention, etc...

Physical Exam:

- General
- Musculoskeletal exam

Neurologic exam

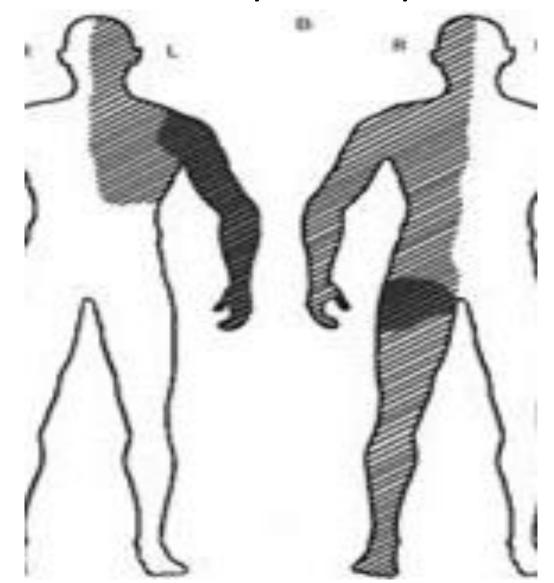
- Mood/Affect, Pain Behavior, Kinesophobia,
 Gait, Transitional movements,
- Joint ROM, SLR: Sitting and Supine, Specific tests: Joints, Spine, (arthritis vs peri-arthritis), Myofacial trigger points
- Motor, DTR, Sensory:(Light touch, Pinprick, Cold, Vibration, Deep pressure, Temperature), Babinski, Hoffman's, Clonus,...

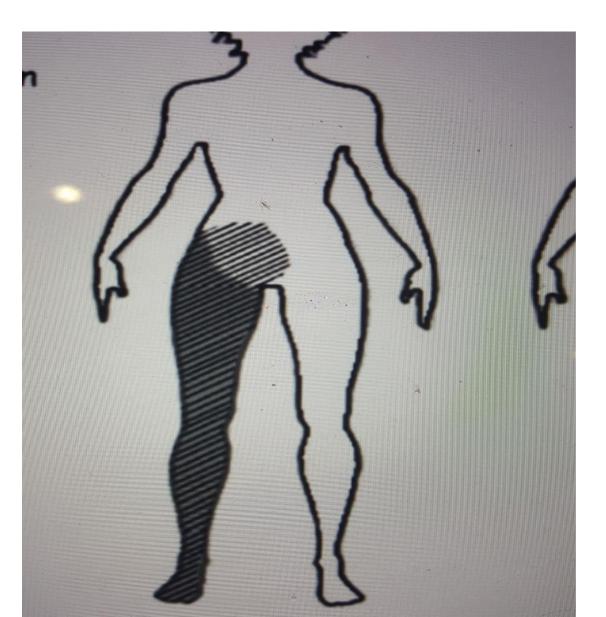
-Specific tests



Upper Quadratomal Sensory Deficit Hemibody Sensory Deficit

Lower Quadratomal Sensory Deficit





Nondermatomal Somatosensory Deficits (NDSDs)

- Definition of NDSD
- NDSD Characteristic
- Mechanism of NDSD
- Prevalence of NDSD
- Etiology
- Pathophysiology
- Cases
- Treatment
- Prevention

Definition of Nondermatomal Somatosensory Deficits (NDSDs):

Reduced cutaneous sensation to multiple modalities:

```
light touch,
pinprick,
cold,
vibration,
deep manual pressure
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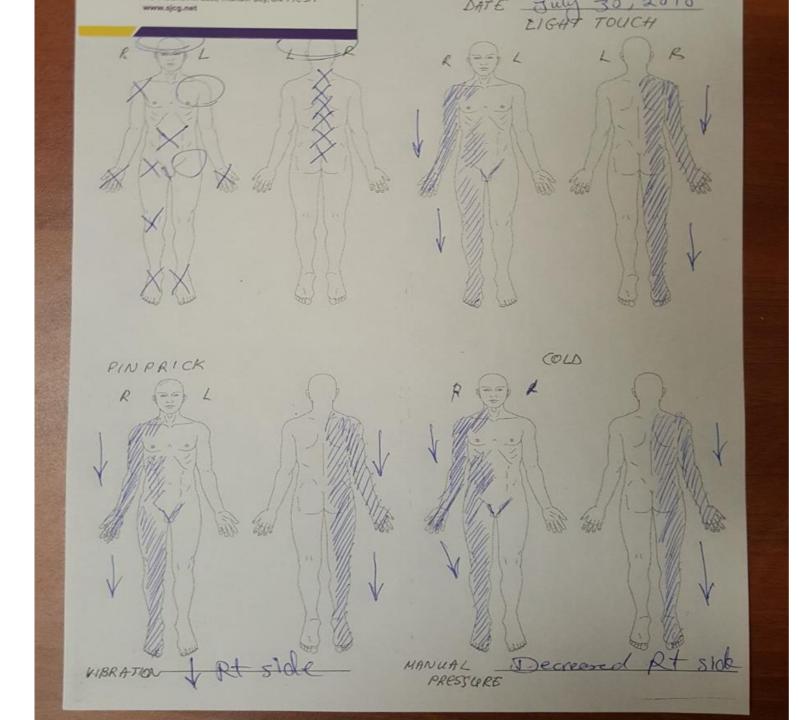
Most patients are unaware of NDSDs (discovery of NDSD during examination)

- 1-Hypoalgesia to pinprick in 100% of the subjects with NDSDs,
- 2-Hypoesthesia to light touch in 94.7%,
- 3-Hypoesthesia to cold in 89.4%,
- 4-Reduction to vibration sense in 81.5%,
- 5-Deep manual pressure reduced in 65.8%



Sensory Body Map:

LT PP Cold Vibration Deep Pressure



NDSD Characteristic

Intensity:

- Very Mild reduction
- Mild
- Moderate
- very dense
- (complete anesthesia)

Variability over time

- Highly variable
- Extremely fixed
- NDSD size tends to increase or decrease in tandem with pain intensity
- NDSD borders can be ill-defined or sharply demarcated across large nonanatomical areas,

Onset and Temporal Characteristics

- * The majority of NDSDs seem to develop gradually after an inciting event (in parallel with worsening and spreading pain).
- * The inciting event is usually minor but almost always associated with an intense psychotraumatic experience (MVA, workplace accidents, unexpected threat, embarrassment, perception of injustice,....)
- * Sometimes, they appear in the context of prolonged, psychotraumatic experiences (PTSD, Abuse, Anxiety, Depression,...)

Prevalence

Fishbain et al. (1991) reported 40% of 247 primarily myofascial pain patients had NDSAs. Interestingly, these abnormalities were much more prevalent in patients with workers compensation or ongoing litigation claims (77%) than those patients without (23%),

Kajiyama, et al (1999) reported hemibody hypoalgesia to pinprick at the side of more

intense pain in 38% of 76 patients with fibromyalgia,

Mailis et al. (2001) found hemisensory or quadrotomal deficits (NDSDs) to pinprick, light touch, and

cold perception in 25% at the side of worst pain in a consecutive series of 194 patients.

Arvantaj, et al (2008) found NDSDs in 45% of 184 injured workers

Prevalence in normal population

There is very little, if any, information about what the prevalence of NDSDs may be in other patient populations or the general population. Nonetheless, it is apparent that NDSDs are strongly associated with chronic pain and that NDSDs are common in all chronic pain patient groups.

Etiology

- *No structural peripheral or central nervous system lesions *Psychological factors are believed to be contributory in the onset, exacerbation, severity, or maintenance of the NDSDs.
- *Under a multiplicity of emotionally charged conditions or certain personality organizations, dynamic aberrations of brain function can occur in individuals utilizing specific mechanisms to avoid unpleasant physical or emotional events.
- *Magnitude of original trauma or inciting event and the duration of actual nociception may be insignificant or minor

NDSD - FMRI

Unperceived stimuli applied to anesthetic body parts failed to activate areas that are normally activated with perceived touch and pain, notably, the thalamus, posterior region of the anterior cingulate cortex (ACC), and Brodmann's area (BA) 44/45. Furthermore, unperceived stimuli were associated with deactivations in primary and secondary somatosensory cortex (S1, S2), posterior parietal cortex (PPC), and prefrontal cortex (PFC). Finally, unperceived (but not perceived) stimuli activated the rostral and perigenual ACC. Given the findings of rostral and perigenual ACC activation during unperceived brush or noxious stimulation, it was suggested that patients may be directing attention toward the ongoing pain, which could attenuate stimulus-evoked activation resulting from an attention switch. Rostral regions of the ACC, including the perigenual ventral portion, are indeed thought to be involved in cognitive processes and emotion and are part of the medial pain system (Vogt, Sikes, & Vogt, 1993).

Pathophysiology of NDSD

NDSDs are due to *maladaptive* neuroplasticity and represent a failed attempt by the brain to shut down somatosensory input in an attempt to control pain NDSDs are examples of "functional deafferentation" (as opposed to structural deafferentation, e.g., brachial plexus avulsion). It is a product of a central neurophysiological

NDSD

- (a) has a psychobiological substrate at the level of the CNS,
- (b) very frequently associated with chronic pain and/or psychotraumatic experiences,
- (c) occur very frequently in the context of conversion disorder, but
- (d) can also occur in the absence of conversion disorders,
- (e) can be superimposed on structural neurological deficits,
- (f) respond positively, or at least in part, to sodium amobarbital (commonly referred to as the "truth serum

References

 Nondermatomal Somatosensory Deficits (NDSDs) and Pain: State-ofthe-Art Review

Angela Mailis & Keith Nicholson

Psychol. Inj. and Law (2017) 10:313-329

 Nondermatomal somatosensory deficit: Overview of unexplainable negative sensory phenomena in chronic pain patients

Angela Mailis & Keith Nicholson

Current opinion in Anaesthesiology 2010 23:593-597

Does our Cruise make sense?



Myofascial Trigger points

www.triggerpoints.net

The Trigger Point & Referred Pain Guide

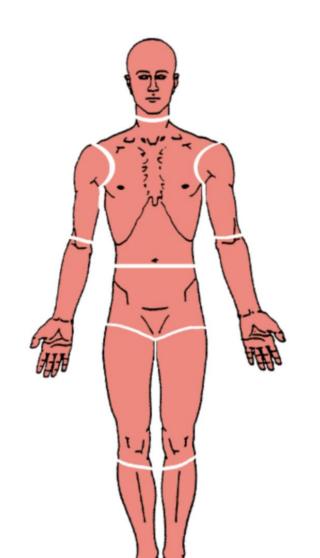
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Muscles

Symptoms

Info

Select Symptom Area



Upper Back, Shoulder, and Arm Torso

Lower Torso

Leg, Ankle & Foot

Hip, Thigh & Knee

Head and Neck

Forearm & Hand Pain

Мар

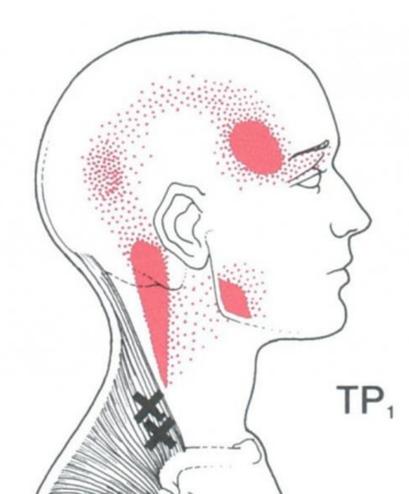
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Muscles

Symptoms

Info

Trapezius Trigger Point Diagram



Symptom Area:

Head and Neck

Primary Symptoms

Back of Head Pain

Back of Neck Pain

Cheek Pain (like Sinusitis)

Headaches or Migraines

Mid-Thoracic Back Pain

Problems Holding Arms Up (as when folding sheets)

Temple and Eyebrow Pain

Temporal Headache (Temples)

Temporomandibular Joint Disorders (TMJ)

Upper Thoracic Back Pain

Secondary Symptoms

Back of Shoulder Pain

Trapezius (Wikipedia)

The X's represent the Trigger Points. There is no difference between the black and white

Trigger Point & Referred Pain Guide

Google Custom Sea

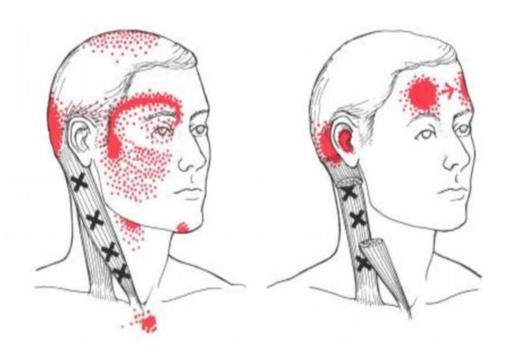
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Muscles

Symptoms

Info

Sternocleidomastoid Trigger Point Diagram



Sternocleidomastoid is commonly abbreviated to "SCM".

Symptom Area:

Head and Neck

Primary Symptoms

Back of Head Pain

Cheek Pain (like Sinusitis)

Dizziness When Turning Head or Changing Field of View

Double/Blurry/Jumpy Print Vision

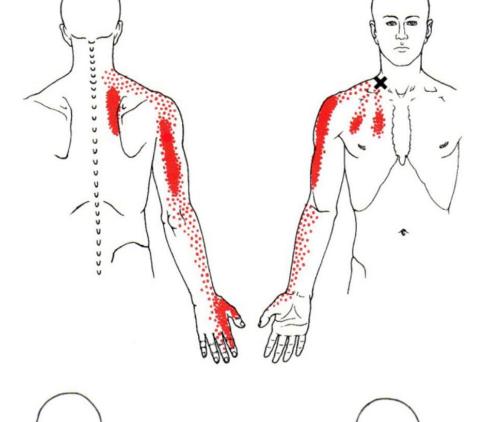
Dry Cough

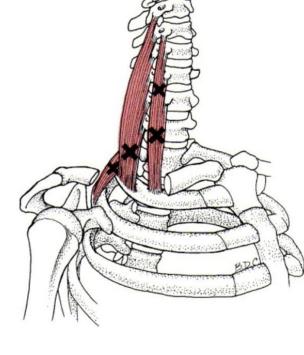
Ear Pain

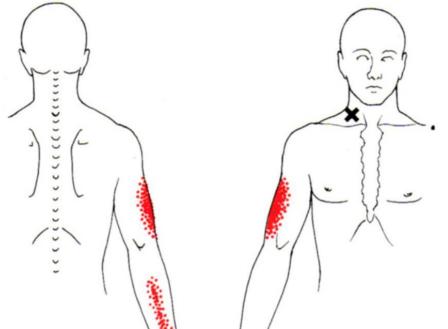
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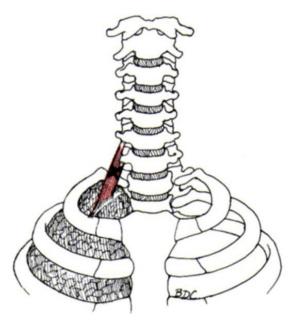
Scalen TP

- Symptom Area:
- Upper Back, Shoulder, and Arm
- Primary Symptoms
- Back of Arm Pain
- Dorsal Finger Pain
- Front of Arm Pain
- Front of Chest Pain
- Front of Shoulder Pain
- Mid-Thoracic Back Pain
- Painful Weak Grip
- Thumb & Radial Hand Pain
- **Upper Thoracic Back Pain**

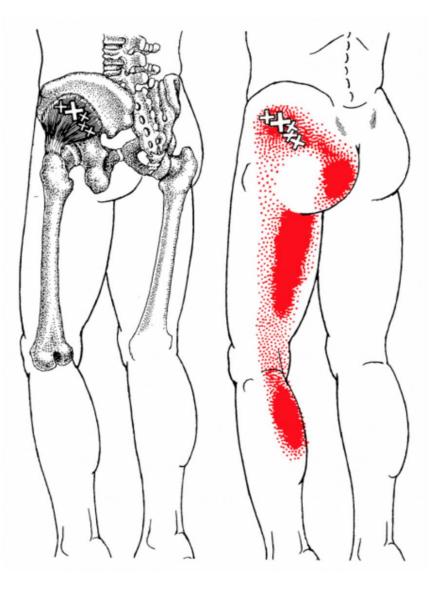








Gluteus Minimus Trigger Point Diagram



Symptom Area:

Hip, Thigh & Knee

Primary Symptoms

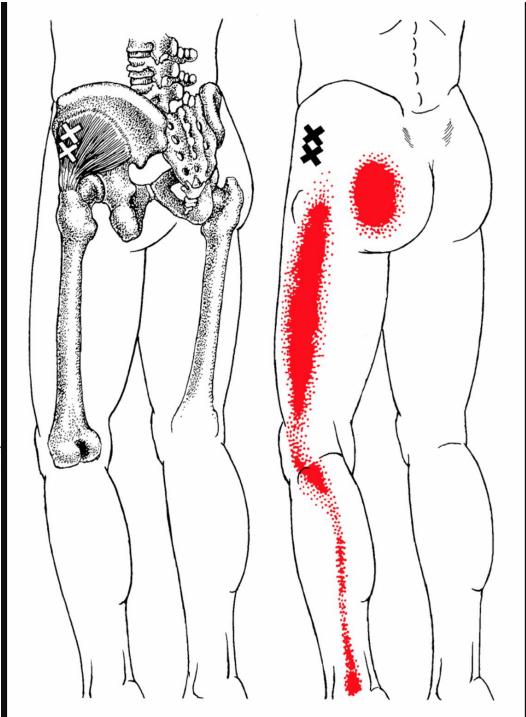
Buttock Pain Lateral Thigh & Hip Pain Posterior Leg (Calf) Pain Posterior Thigh Pain Sciatica

Secondary Symptoms

Lateral Leg Pain

Gluteus Minimus (Wikipedia)

The X's represent the Trigger Points. X's. The red shaded area is the referr red means more people experienced



STATE OF THE ART REVIEW

CRPS

Budapest's Criteria

Box 1 | Current International Association for the Study of Pain clinical diagnostic criteria for complex regional pain syndrome¹

- Continuing pain, which is disproportionate to any inciting event
- Must report at least one symptom in three of the four following categories*:
 - Sensory: Reports of hyperalgesia and/or allodynia
 - Vasomotor: Reports of temperature asymmetry and/or skin color changes and/or skin color asymmetry
 - Sudomotor/edema: Reports of edema and/or sweating changes and/or sweating asymmetry
 - Motor/trophic: Reports of decreased range of motion and/or motor dysfunction (weakness, tremor, dystonia) and/or trophic changes (hair, nails, skin)
- Must display at least one sign at time of evaluation in two or more of the following categories*:
 - Sensory: Evidence of hyperalgesia (to pinprick) and/or allodynia (to light touch or deep somatic pressure, or joint movement)
 - Vasomotor: Evidence of temperature asymmetry and/or skin color changes and/or asymmetry
 - Sudomotor/edema: Evidence of edema and/or sweating changes and/or sweating asymmetry
 - Motor/trophic: Evidence of decreased range of motion and/or motor dysfunction (weakness, tremor, dystonia) and/or trophic changes (hair, nails, skin)
- There is no other diagnosis that better explains the signs and symptoms

^{*}For research settings in which it is desirable to maximize specificity, a more stringent research diagnostic decision rule requires all four of the symptom categories and at least two of the sign categories to be positive for diagnostic criteria to be met.

How was your trip so far?

Enjoy?

We are going to change the cruse

Gratitude!

