



Old and New Drugs in Chronic Pain Management

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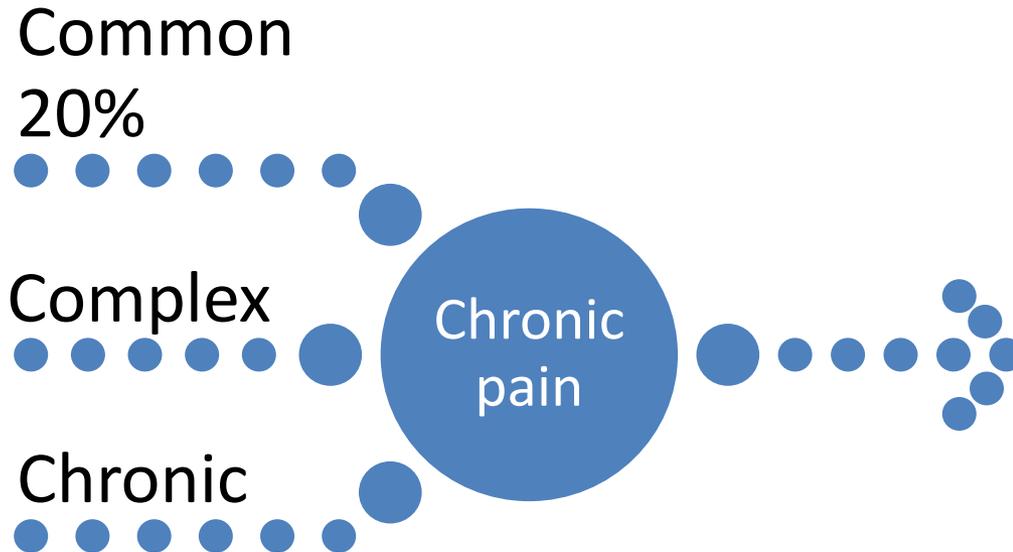


Learning Objectives

By the end of this presentation participants will be able to:

- List 3 commonly prescribed medications for chronic pain, but that should NOT be prescribed
- Identify 3 old drugs that should be more prescribed for chronic pain, but are rarely prescribed
- Describe the principles of rational polypharmacy when combining old and new drugs for chronic pain

What is the problem we are trying to solve?



Patients:

Disability
Poor quality of Life
Suicide (2x)

Providers:

Lack of knowledge, skills,
competence and confidence
Role confusion
↑ Prescribing, ordering tests,
procedures, surgeries, referrals

System:

Costs
Health Care utilization
Wait lists to specialists

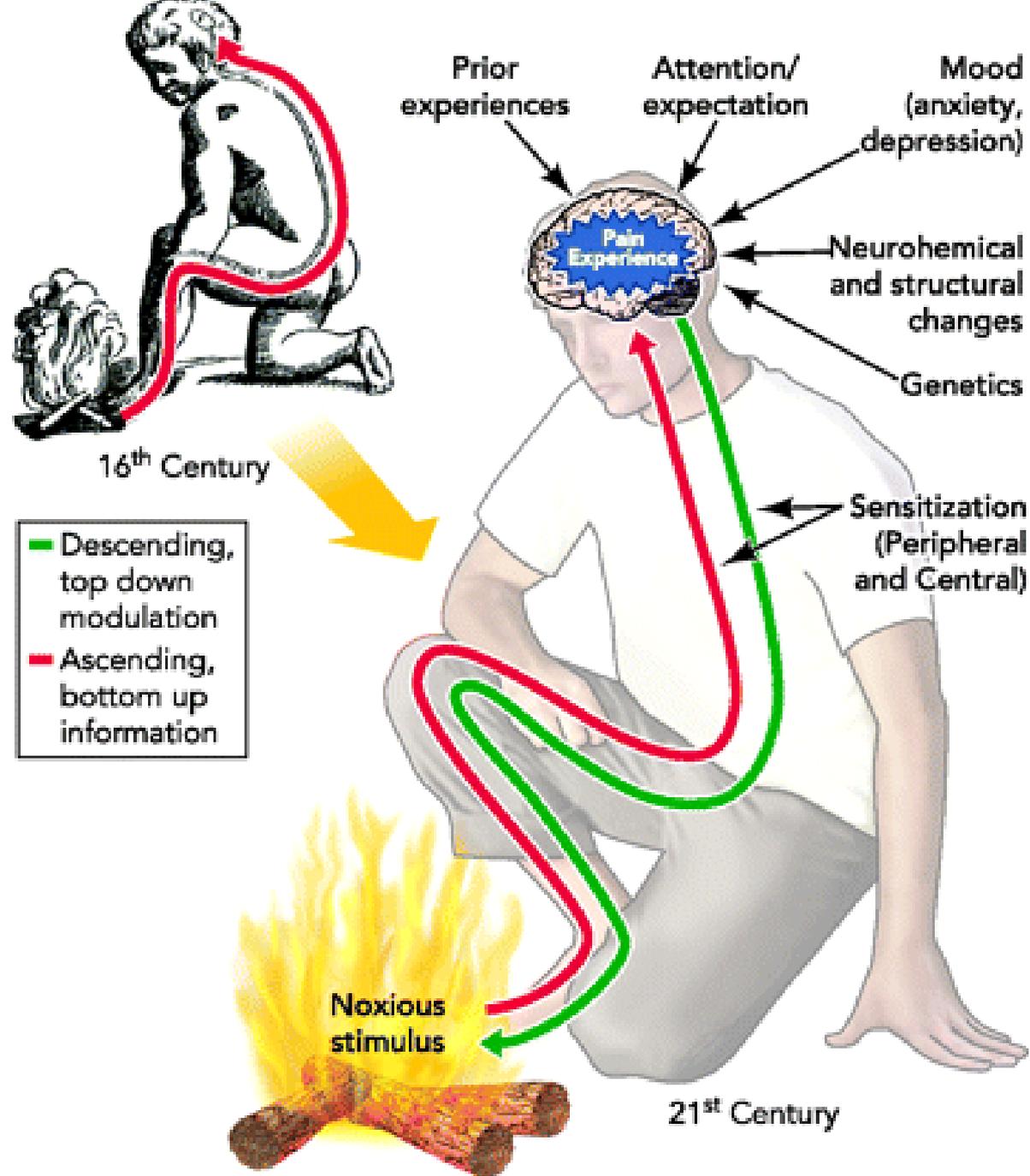
Not all chronic pains are the same

The good chronic pain



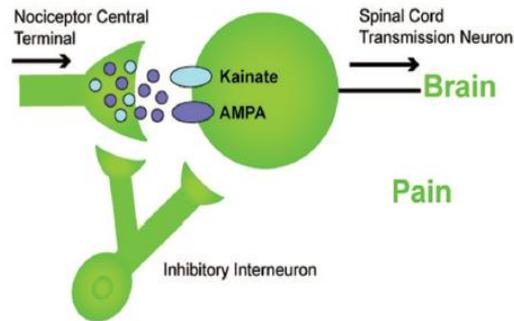
The bad chronic pain



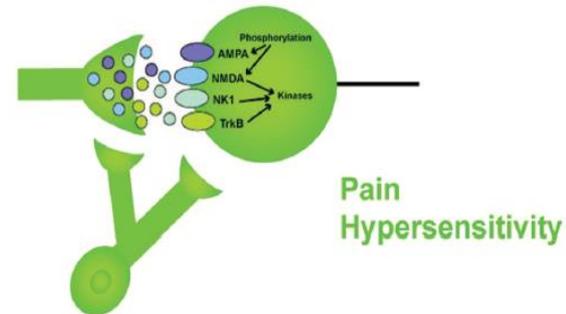


Central Sensitization at the spinal cord level

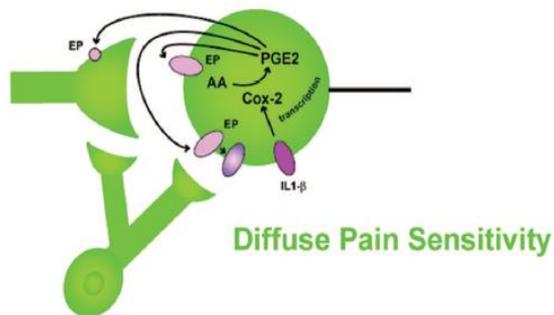
A. Nociceptive Transmission



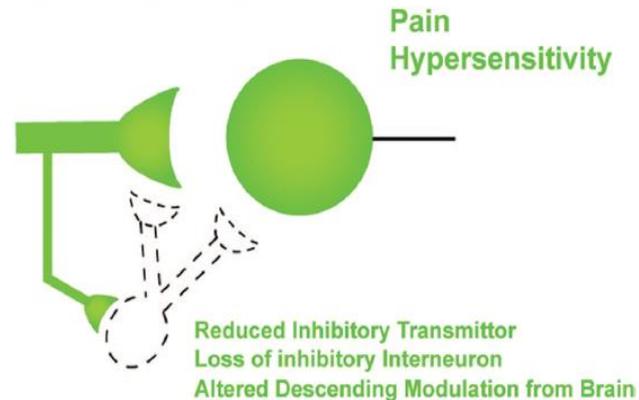
B. Central Sensitization - Acute Phase



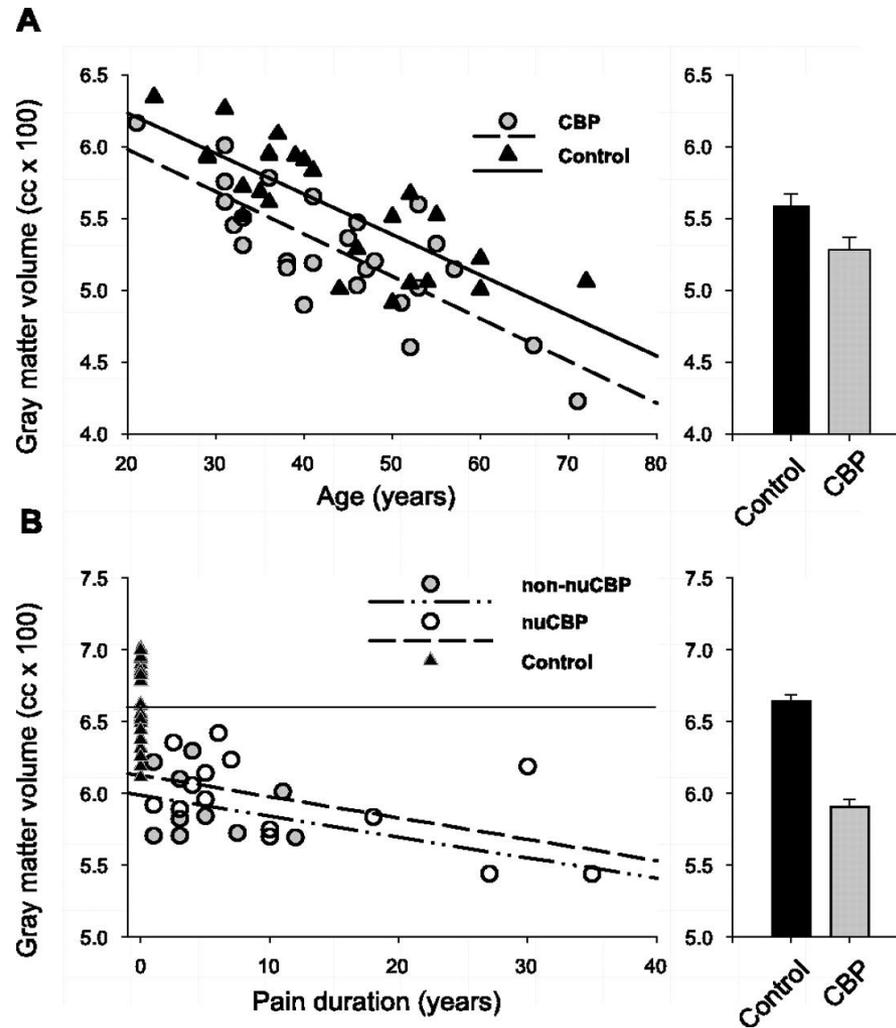
C. Central Sensitization - Late Phase



D. Disinhibition

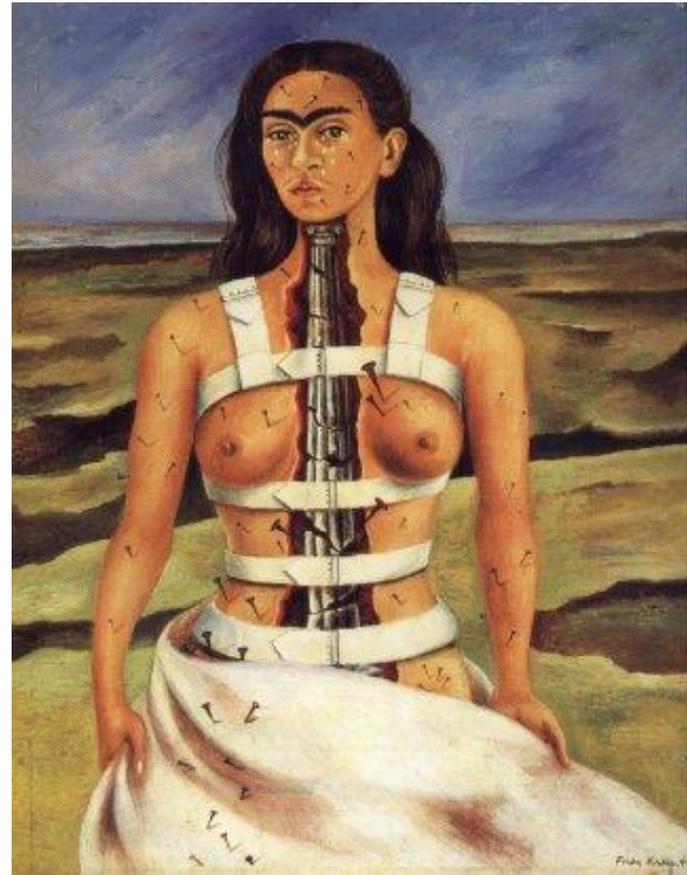
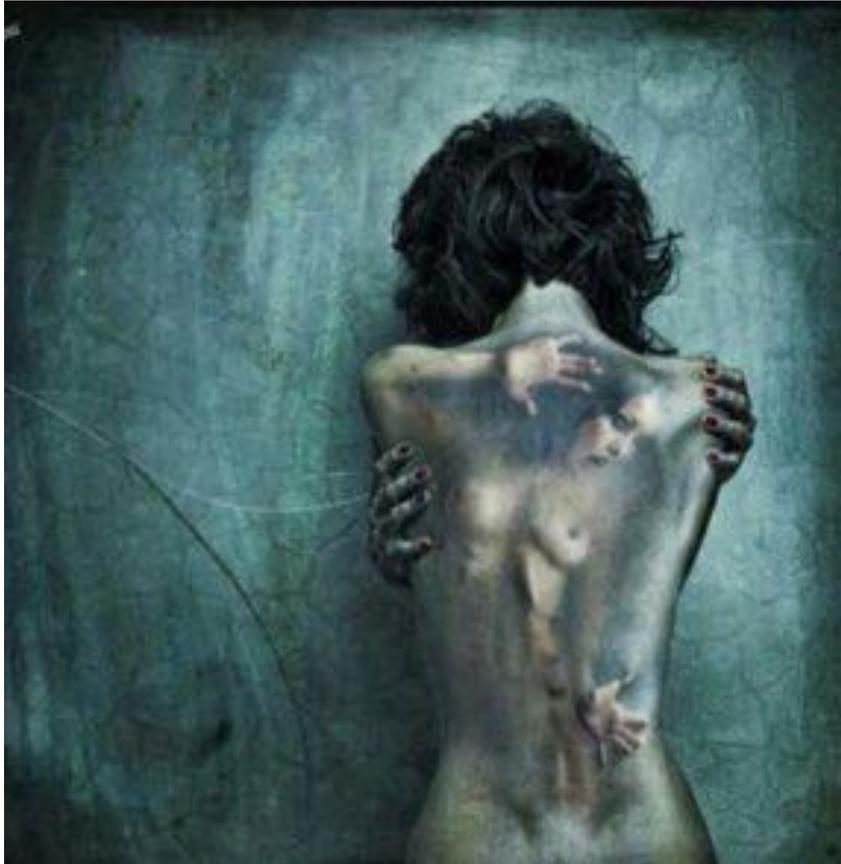


Decreased whole-brain cortical gray matter volume in Chronic Back Pain subjects.



Apkarian 2004

Central Sensitization: symptoms and signs



Central Sensitization: symptoms and signs

Symptoms

- Hypersensitivity to bright light, noise, touch, pesticides, food, mechanical pressure, medication, temperature, weather
- Pain all over
- Fatigue (physical and mental)
- Sleep disturbance
- Numbness
- Swelling sensations
- Low libido
- Low mood

Signs

- Non-dermatomal somatosensory deficits or gains
- Hyperesthesia to light touch, mechanical touch, pressure, vibration, heat and cold, with movement
- Hyperpathia
- Dermographism

Hyperesthesia

Increased sensitivity to stimulation, excluding the special senses.

- To a non-painful stimulus: e.g. light touch
- To a painful stimulus: in this case we call it “allodynia”



[Neuropen](#)

Price: **\$28.50**



[Sensory brush](#)

Price: **\$18.95**



[Tooth Pick](#)

Price: **\$2.49**



[Cotton Ball](#)

Price: **\$18.00**



[Safety Pin](#)

Price: **\$10.00**



[Sterile Pinwheel](#)

Price: **\$2.50**



[Disposable plastic pinwheel](#)

Price: **\$90.00**



[Wartenberg Pinwheel](#)

Price: **\$35.00**

Not all chronic pains are the same

Chronic Pain without CS

- Ascending Pain pathways are intact
- Descending inhibitory pathways are intact
- Underlying chronic pathology → pain
- No signs of central sensitization
- Expected (normal) psychological response
- The pain exists to alert the individual to seek treatment
- For example: hip osteoarthritis, shoulder impingement syndrome, trigeminal neuralgia.

Chronic Pain with CS

- Malfunction of pain system
- No underlying pathology
- Many symptoms: difficulty to concentrate, sleep, relationships, work
- Chronic fatigue (physical and mental)
- Many physical signs of central sensitization
- Abnormal psychological response to pain
- It has no function to the individual
- For example: fibromyalgia

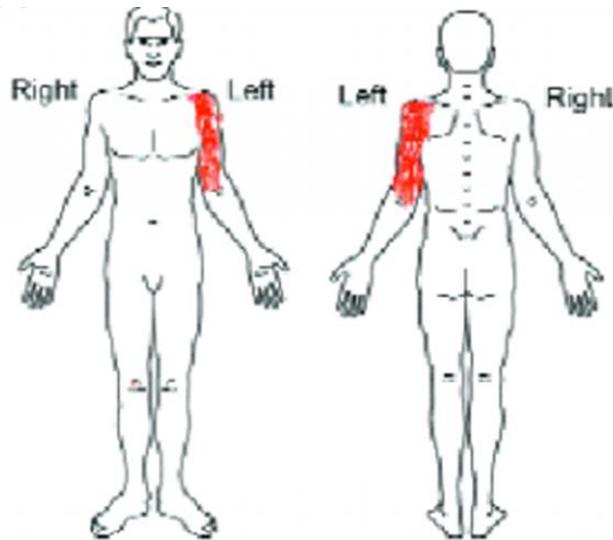
Central sensitization

Central sensitization is amplification within the CNS resulting in more intense perception of pain, thereby acting in the maintenance of chronic pain (McAllister 2012; Woolf 2011)

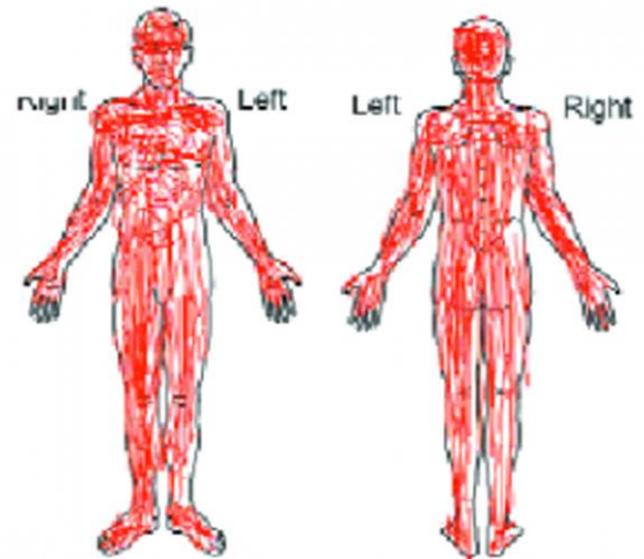
“Ignorance of central sensitization leads to a wild goose chase and patients riding a merry-go-round of expensive and ineffective therapies.”(Paul Ingraham)

Opioid induced hyperalgesia

Signs and symptoms: larger pain area with hyperalgesia



2011 – Repetitive movement
shoulder at work
Started hydromorphone IR



2016 – Whole body pain, not
working, depressed, high dose of
Hydromorphone CR + IR

Hyperalgesia

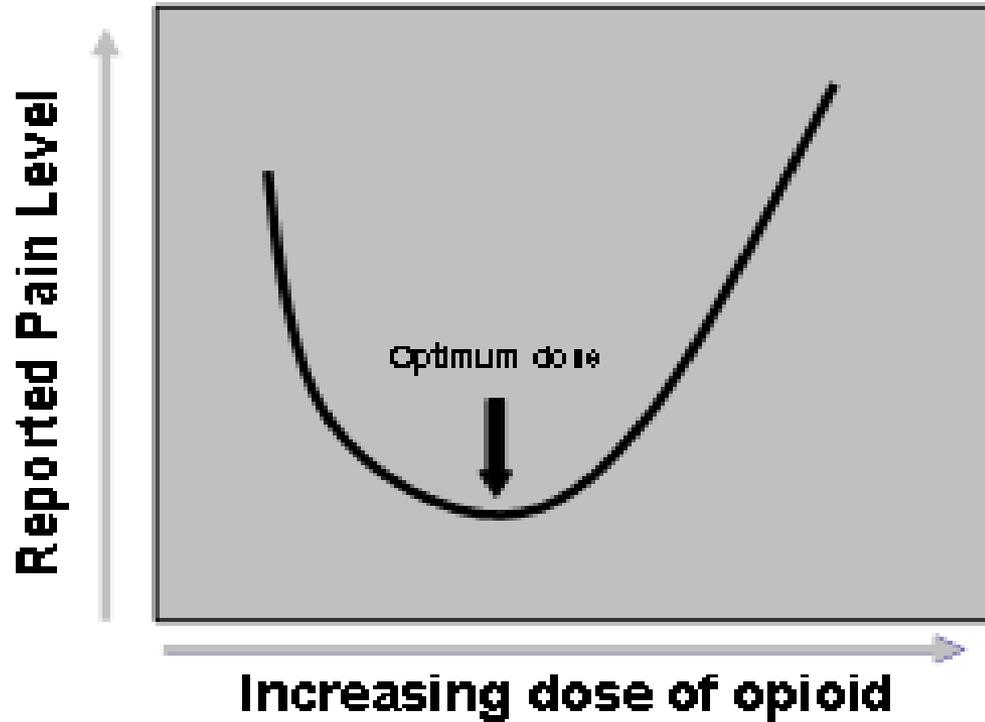
Increased pain from a stimulus that normally provokes pain



Opioid induced hyperalgesia

- Signs and symptoms: larger pain area with hyperalgesia
- Opioid → NMDA receptor agonist → influx of calcium → enhances excitability of the neuron → can transmit painful impulses initiated by circulating substance P or other noxious stimuli.
- Glutamate is the primary endogenous agonist of the NMDA receptor.
- NMDA receptor antagonist (ketamine, methadone) → relieve OIH

Opioid Hyperalgesia



Ballantyne & Mao

Opioid therapy for chronic pain. NEJM 2003

1- Opioids and Chronic pain

No

Do not prescribe opioids for chronic pain with central sensitization

Yes

May consider opioids when there is no central sensitization

Need to assess patient's risks
Need to do a trial of opioid therapy

Use the Canadian Opioid Guideline & Opioid Manager

Guidelines

To help clinicians to do the right thing
Create barriers to do the wrong thing



Polypharmacy



THE GOOD THE BAD AND THE UGLY

Polypharmacy for chronic pain

Good (rational)	Bad	Ugly
Evidence-based multimodal therapy		
Type of pain → selection of appropriate agent		
Opioid sparing or Below watchful dose		
Fewer adverse effects Minimal risks No complications		

Polypharmacy for chronic pain

Good (rational)	Bad	Ugly
Evidence-based multimodal therapy	Drugs contra-indicated: e.g. duloxetine and kidney failure; NSAIDs and previous MI	
Type of pain → selection of appropriate agent	Add-on drugs to manage adverse effects: laxatives, androgens, methylphenidate for drowsiness, or diphenhydramine for itching.	
Opioid sparing or Below watchful dose	Multiple opioids	
Fewer adverse effects Minimal risks No complications	Additive side effects: e.g. SNRI + SSRI + TCA → serotonin syndrome	

Polypharmacy for chronic pain

Good (rational)	Bad	Ugly
Evidence-based multimodal therapy	Drugs contra-indicated: e.g. duloxetine and kidney failure; NSAIDs and previous MI	Multiple anti-inflammatories (steroids, NSAIDs)
Type of pain → selection of appropriate agent	Add-on drugs to manage adverse effects: laxatives, androgens, methylphenidate for drowsiness, or diphenhydramine for itching.	Multiple CNS depressants
Opioid sparing or Below watchful dose	Multiple opioids	Opioids + Benzos and/or methadone
Fewer adverse effects Minimal risks No complications	Additive side effects: e.g. SNRI + SSRI + TCA → serotonin syndrome	

Quiz

Which class of drug is overprescribed for pain, is highly abused, and its use has been associated with an increasing number of emergency department visits?

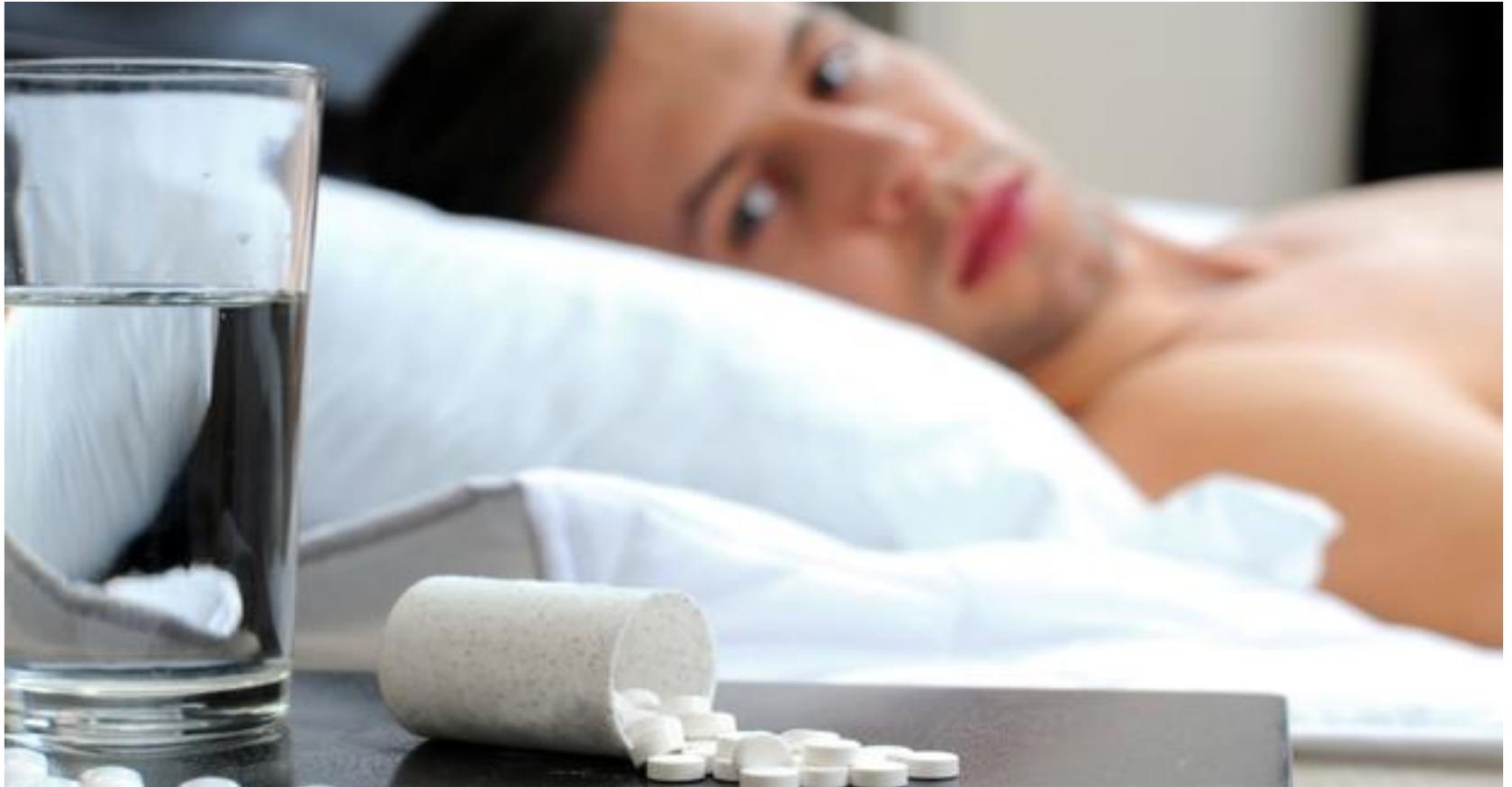
A – Anticonvulsants

B – Benzodiazepines

C – Anti-spasticity (e.g. Baclofen)

C – Antidepressants

What patients don't know about sleeping pills



What patients don't know about sleeping pills

- Are NOT approved by Health Canada for long-term use
- Do NOT improve quality of sleep
- Are highly addictive
- Have a high street value
- May kill the patient
- The doctor may lose the medical license because of bad prescribing
- The doctor prescribes them because it is the easiest thing, not because it is the best thing



**It takes 5
minutes
to do what is
wrong,
and 30 minutes
to do what is
right.**



StreetRx.com → Canada

streetRx latest street prices for prescription drugs

Choose country: Canada

Register Log In

Search Results ▾ PAST 12 MONTHS

+ See what others paid

- Xanax Search

\$ Did you get a good deal? Submissions are anonymous

* Name of drug
[input field]

* Formulation [dropdown menu]

* Price per unit \$ [input field]

Please choose a drug to see formulation options

Continue

Prices for Xanax — Canada

Include products with the same active ingredient

\$4 Jan 26 2016	Xanax, 2mg pill Ontario	Rate: \$ \$ \$ \$ \$
\$10 Jan 12 2016	Xanax, 2mg pill Toronto, Ontario	Rate: \$ \$ \$ \$ \$
\$6.50 Dec 24 2015	Xanax, 2mg pill Alberta	Reasonable \$ \$ \$ \$ \$
\$6.50 Dec 24 2015	Xanax, 2mg pill Edmonton, Alberta	Rate: \$ \$ \$ \$ \$
\$10 Dec 9 2015	Xanax, 2mg pill Edmonton, Alberta	Not Bad \$ \$ \$ \$ \$
\$1 Nov 29 2015	Xanax, 0.5mg pill British Columbia	Rate: \$ \$ \$ \$ \$
\$15 Nov 27	Xanax, 2mg pill Toronto, Ontario	Rate: \$ \$ \$ \$ \$

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Sleep problems and chronic pain

- 10% of patients presenting in primary care in the US reported major insomnia (Simon, VonKorff, Am J Psychiatry 1997)
- 10.8% of the general population in Canada had sleep disturbance as frequent or very frequent (Atkinson et al, Clink J Pain, 1988)
- 70% of individuals referred to a chronic pain clinic reported poor sleep (Pilowsky et al, Pain 1985)
- 14% of patients with rheumatoid arthritis reported very severe interference with sleep (Nicassio and Wallston, J Abnorm Psychol 1992)

Nonpharmacological treatment for sleep disturbance in chronic pain

- Behavioral Therapy
 - Relaxation therapy
 - Meditation
 - Sleep restriction
 - Stimulus control
- Cognitive Therapy
- Psychotherapy
- Sleep Hygiene
- Light Therapy
- Regular physical activity
- Exercises
- Weight loss (fatty liver)
- Iron and vitamin supplements
- Melatonin for jet lag

Interprofessional Pain Management



Pharmacological treatment for sleep problems in chronic pain

Treatment of underlying depression or neuropathic pain

- Antidepressants: amitriptyline, trazodone
- Anticonvulsants: gabapentin, pregabalin

Treatment of underlying myofascial pain

- Muscle relaxants
- Acetaminophen

2- Sleep problems
and Chronic Pain

No

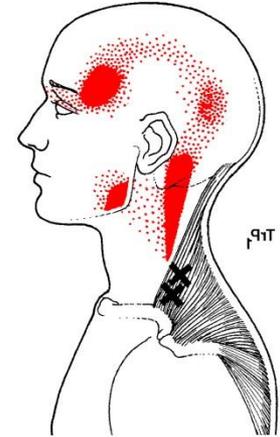
Hypnotics

Yes

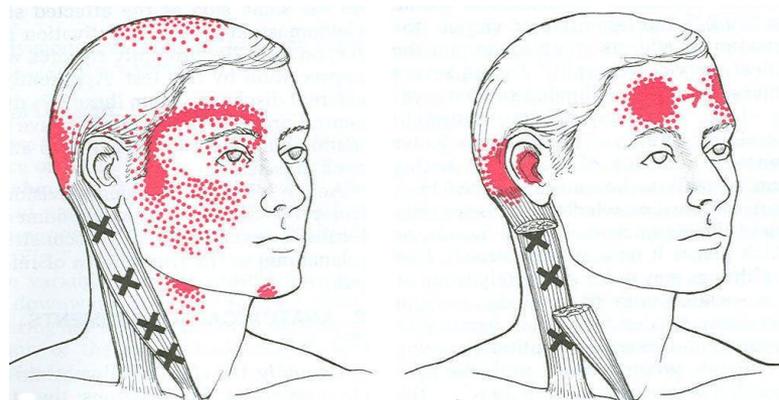
Amitriptyline,
Trazodone
Gabapentin
Pregabalin

Myofascial Pain Syndrome

Upper trapezius



Sternocleidomastoid



Myofascial Pain Syndrome

- Definition: it is a painful condition that affects the muscles and the fascia.
- MPS can involve a single muscle or a group of muscles.
- Trigger points are highly sensitive areas within the muscle that are painful to touch and cause pain that can be felt in another area of the body, called referred pain.

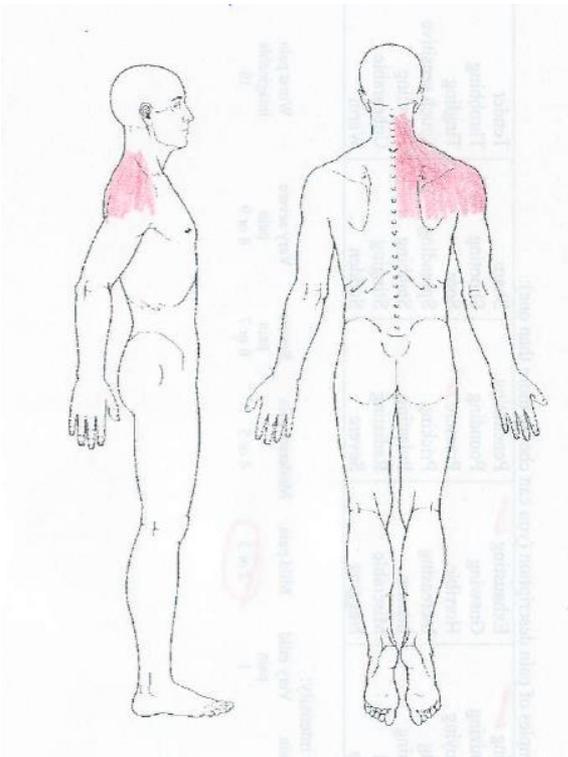
MPS: signs and symptoms

- Deep, aching pain in a muscle. Difficulty to localize
- Pain that persists or worsens with time
- A tender knot in a muscle, may complain that the muscles “swells”
- Difficulty sleeping due to pain, can’t find a position
- Exam: tender spots, with or without radiation (**remember:** normal muscle doesn’t hurt)

MPS vs Fibromyalgia

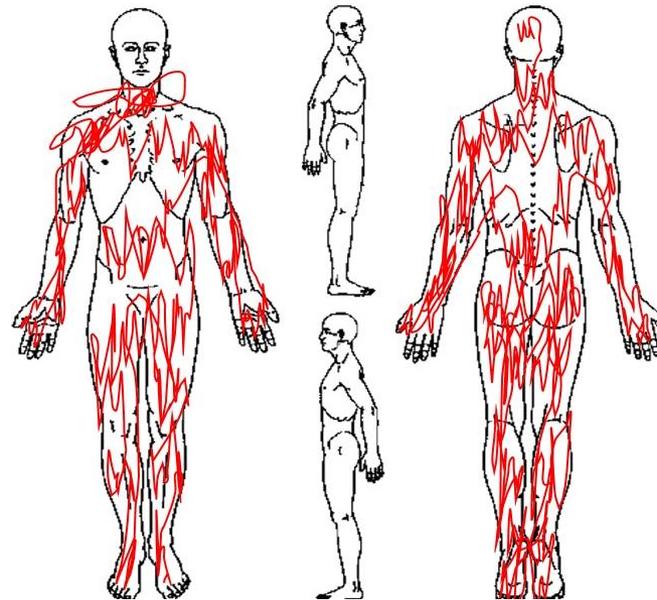
Myofascial Pain Syndrome

- Regional Pain



Fibromyalgia

- Generalized Pain



MPS vs Fibromyalgia

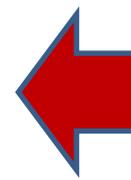
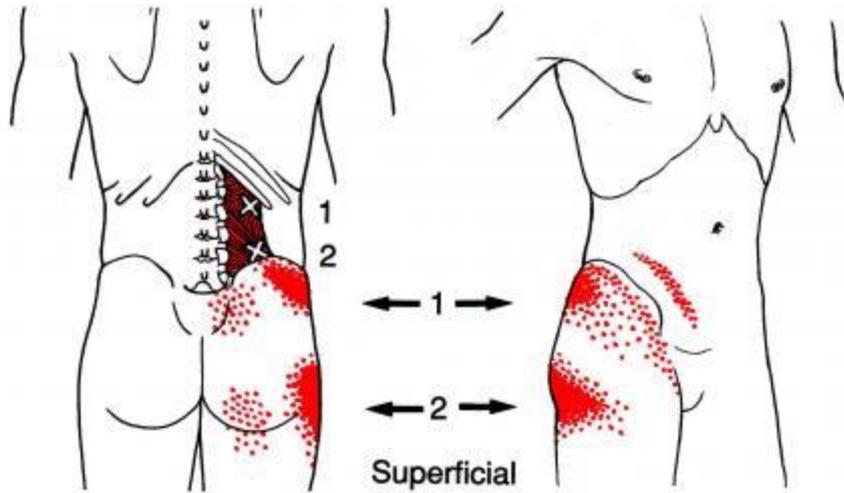
Myofascial Pain Syndrome

- Regional Pain
- Palpable knots in the muscle (trigger points)
- Tightness on palpation
- Imaging techniques: visible areas inside the muscle
- Chemical changes: Lower pH, increased Subst P, Calcitonin Gene Related Peptide, TNF-alpha, IL-1 beta, norepinephrine

Fibromyalgia

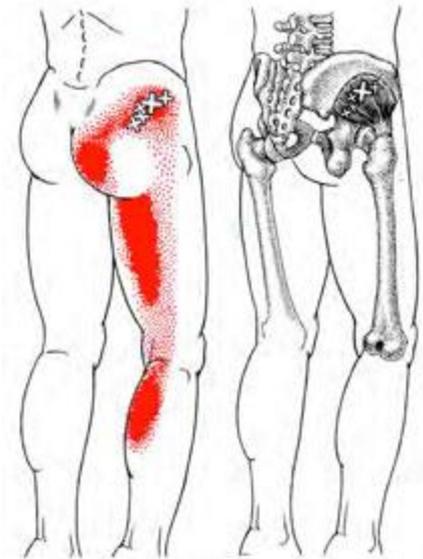
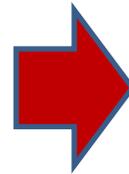
- Generalized Pain
- Muscle tenderness (tender points)
- Softness on palpation
- Imaging techniques: no abnormalities
- No chemical changes

Low-back pain



**Quadratus
lumborum**

Gluteus minimus



Myofascial Pain Syndrome

Non-pharmacological management

Self-management strategies

- Posture
- Ergonomics
- Weight loss
- Stress reduction
- Sleep hygiene
- Diet
- Self-massage
- TENS (wearable device)
- Heat, cold
- Pillow, mattress, couch

Exercises

- Regular aerobic activities (e.g. Walking, dancing, swimming, etc)
- Stretches of affected muscles
- Strengthening of affected muscles
- Relaxation exercises

Myofascial Pain Syndrome

Pharmacological interventions

Yes

- Vitamin supplements: Vit D
- TCAs: amitriptyline
- Pregabalin
- Acetaminophen
- Topical anti-inflammatories (if local inflammation is perpetuating factor)
- Muscle relaxants: cyclobenzaprine
- Lidocaine: trigger point injection

No

- Opioids
- Benzodiazepines
- Baclofen
- Steroids: systemic or injection

3- Myofascial Pain Syndrome

No

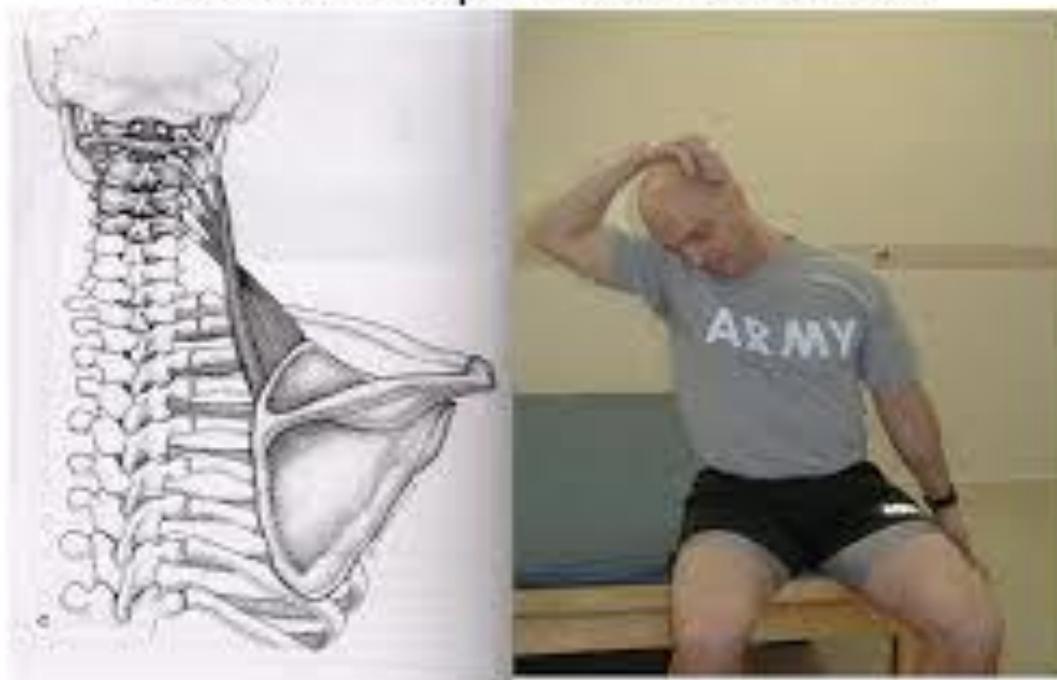
Opioid
Benzodiazepines
Baclofen
Steroids

Yes

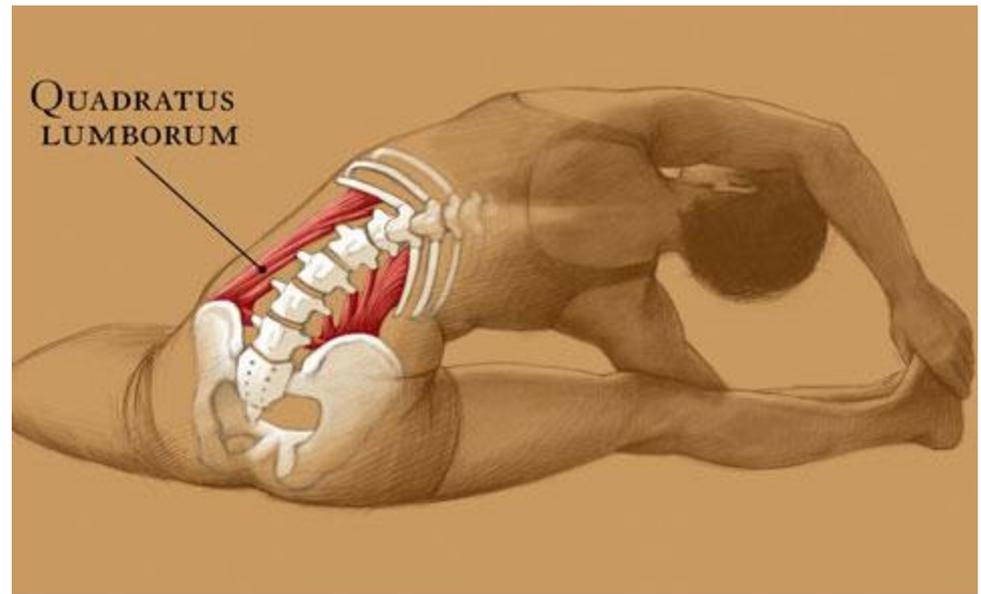
Amitriptyline,
Gabapentin
Pregabalin
Cyclobenzaprine

Neck Pain

Levator Scapula: Self Stretch



Quadratus lumborum



In summary

No

Yes

1- Opioids and central sensitization

Do not prescribe opioids for chronic pain with central sensitization

May consider opioids when there is no central sensitization

2- Benzos and chronic pain

No hypnotics

TCAs
Trazodone
Gabapentinoids

3- Myofascial Pain Syndrome

Opioids
Benzodiazepines
Baclofen
Steroids

TCAs
Gabapentinoids
Muscle relaxants

Learning Objectives

By the end of this presentation participants will be able to:

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2 hour, weekly sessions

Case Based Learning support
management of patients

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CURRICULUM OVERVIEW

CYCLE 4 (Jan – May 2016)		# Sessions
Module 1	Chronic Pain Fundamentals	4
Module 2	Opioids and Addictions	5
Module 3	Special Topics: Diet and Pain, Interventional Treatments, Mindfulness, Chiropractic and Physical Modalities, Core Back Tool	5
Module 4	Special Populations & Managing Pain in the Community: Suicide Risk Assessment, Community Services, Cannabis, Pediatric Pain	4
Module 5	Participant Selected Topics: Myofascial Pain Syndrome and Trigger Point Injections, Psychological Trauma and Pain, Post Surgical Pain	3

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Thank you

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