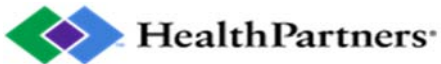




## Meeting the Challenges of Opioids and PAIN

### Overview of Alternative Pain Treatment

Monday, January 14, 2019



## A Provider Toolkit

# Meeting the Challenges of Opioids and PAIN:

PATIENT EDUCATION ON PAIN AND OPIOID PRESCRIPTIONS

ADDRESSING OPIOID PRESCRIPTION PRACTICES

IDENTIFYING SAFE AND EFFECTIVE PAIN MANAGEMENT PROTOCOLS

NONPHARMACOLOGIC AND NON-OPIOID PHARMACOTHERAPY ALTERNATIVES

<http://www.stratishealth.org/pip/opioids.html>

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# Meeting the Challenges of Opioids and Pain: An Overview of Alternative Pain Treatment Options

Isaac Marsolek MD  
HealthPartners Pain Management

## About Me

- University of Minnesota Medical School
- Residency in Physical Medicine and Rehabilitation



## About Me

- Fellowship in Pain Management Fairview Health Services
- Started at Health Partners 10/2013



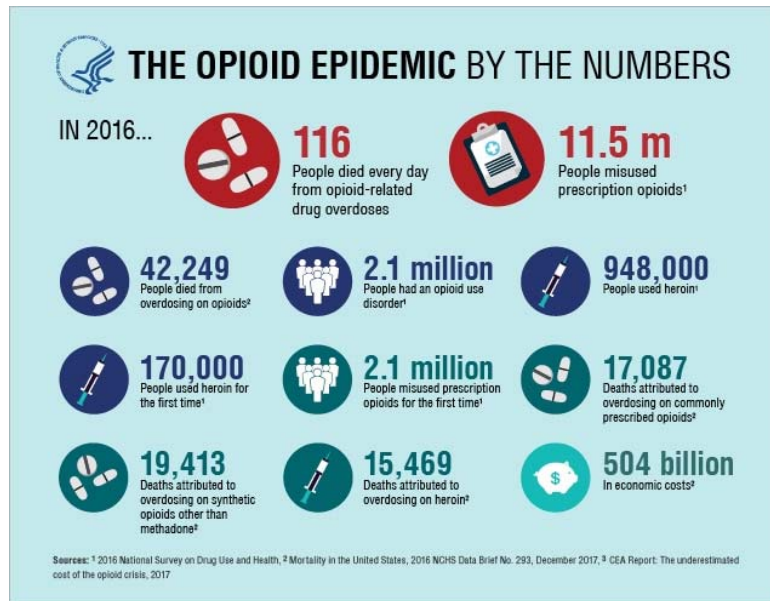
## Financial Disclosure

- Nothing to Disclose

- Brief Refresher on the opioid epidemic
- Understanding and classifying pain to better match treatments
- High level overview of various treatment options

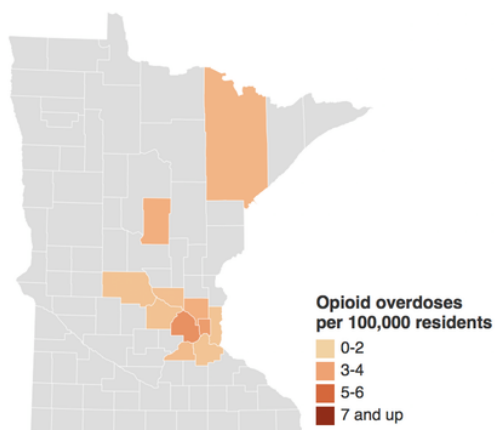
## What is an opioid?

Medication Generic Name	Brand Names	Street/Slang Names
Oxycodone	OxyContin®, Percodan®, Percocet®, and others	O.C., Oxycet, Oxycotton, Oxy, Hillbilly Heroin, Percs
Hydrocodone or dihydrocodeinone (typically combined with acetaminophen)	Vicodin®, Lortab®, Lorcet®, and others	Vike, Watson-387
Morphine	Kadian®, Avinza®, MS Contin®, Duramorph®, Roxanol®	M, Miss Emma, Monkey, White Stuff
Codeine	Various brand names; often combined with acetaminophen and aspirin	Captain Cody, Cody, Lean, Schoolboy, Sizzurp, Purple Drank With glutethimide: Doors & Fours, Loads, Pancakes and Syrup
Fentanyl	Duragesic®, Actiq®, Sublimaze®	Apache, China Girl, China White, Dance Fever, Friend, Goodfella, Jackpot, Murder 8, Tango and Cash, TNT
Hydromorphone	Dilaudid®	D, Dillies, Footballs, Juice, Smack
Meperidine	Demerol®	Demmies
Oxymorphone	Opana®	Biscuits, Blue Heaven, Blues, Mrs. O, O Bomb, Octagons, Stop Signs



### Minnesota opioid overdose death rates, 2000-07

Includes people of all races.



Source: U.S. Centers for Disease Control and Prevention Wonder database



### Risk Factors for Prescription Opioid Pain Reliever Abuse and Overdose



Obtaining overlapping prescriptions from multiple providers and pharmacies.



Taking high daily dosages of prescription opioid pain relievers.



Having mental illness or a history of alcohol or other substance abuse.

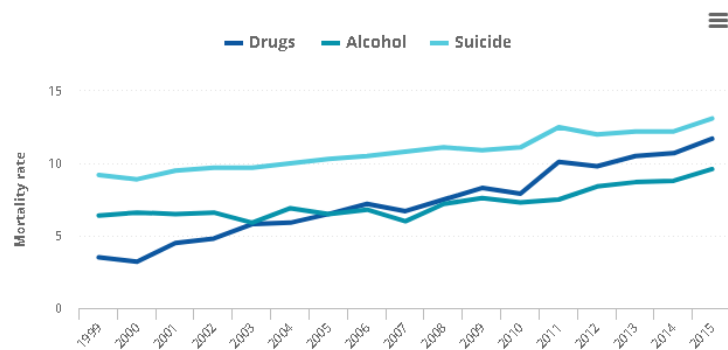


Living in rural areas and having low income.

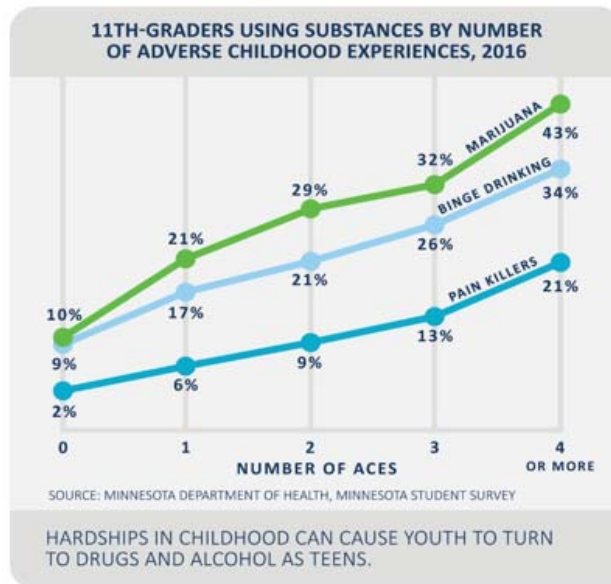
## Diseases of Despair

### Drug, alcohol and suicide mortality in Minnesota, 1999-2015

Rates are age-adjusted, which means they account for differences in the age of the population over time.



Source: Centers for Disease Control (drug and alcohol mortality rates) Minnesota Department of Health (suicide mortality rate)

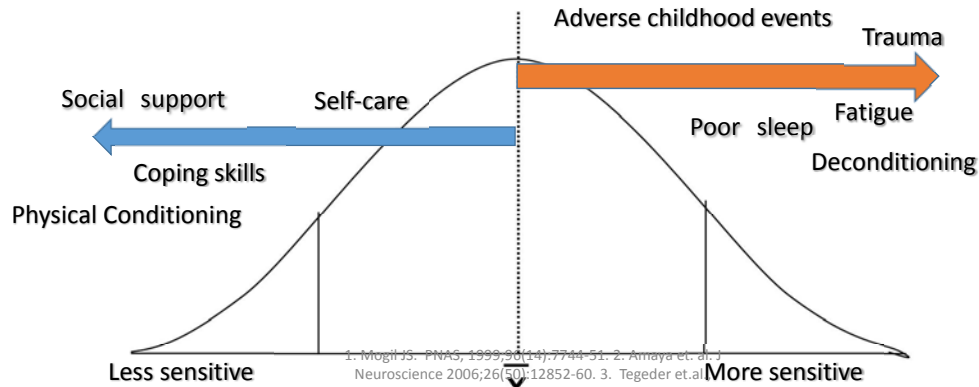


## Chronic Pain Management

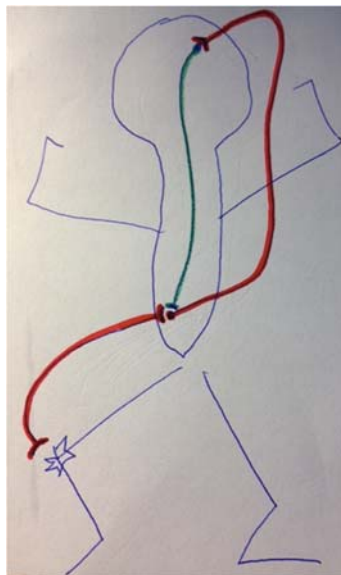


## Pain Sensitivity

- ~50% Genetic ~50% Experience



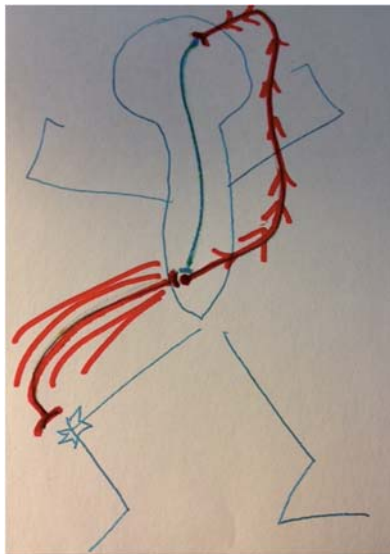
## Normal Pain Feedback Loop



MIT2

## Central Sensitization

### Chronic Pain with Central Sensitization



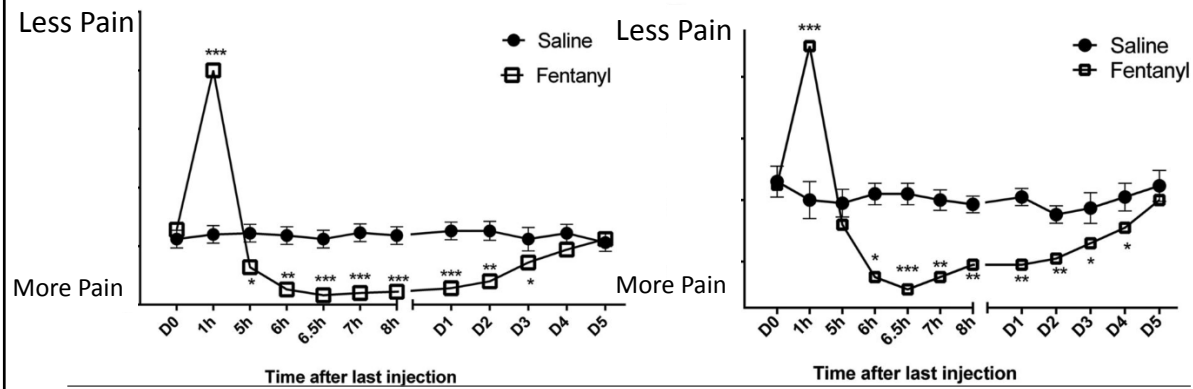
## Slide 19

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**MIT2** Sensory input can be turned up or down. In Central Sensitization it is turned way up. Loss of descending inhibitory control. This is not a psychological illness.

Marsolek, Isaac T, 10/30/2017

## Opioid-induced Hyperalgesia

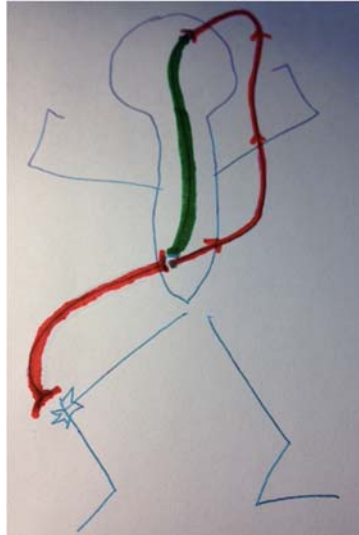


Journal of Pharmacology and Experimental Therapeutics  
October 2016, 359 (1) 82-89

## Opioid-induced Hyperalgesia and Central Sensitization



## Well-Managed Chronic Pain



## Central Sensitization in action

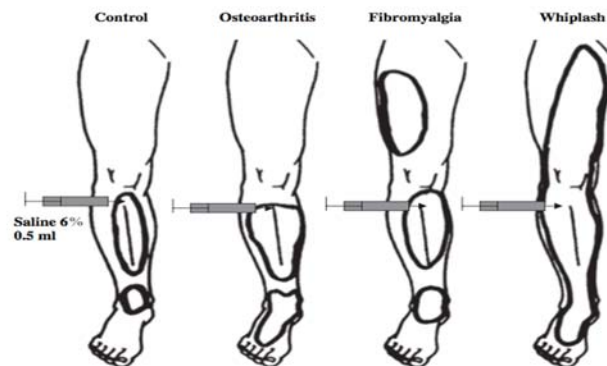
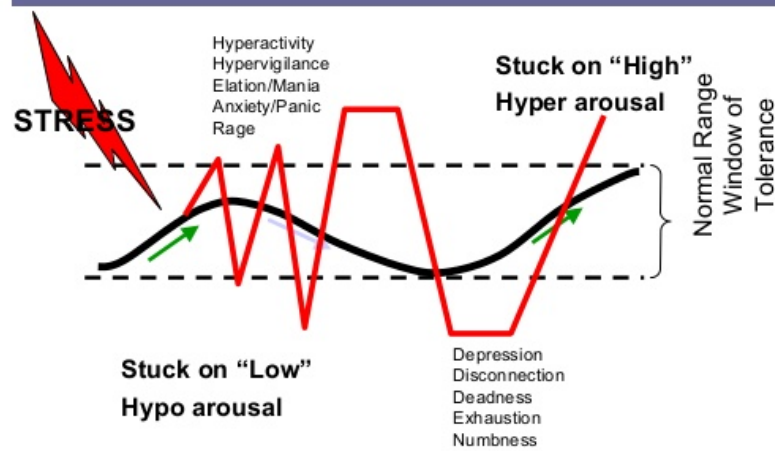


Fig. 2. Pain maps after intramuscular injection of hypertonic (6%) saline 0.5 mL into the tibial anterior muscles of individual subjects. Notice the wider areas of referred pain in patients compared with the healthy subject, strongly indicating central hypersensitivity. (Courtesy of Lars Arendt-Nielsen, Aalborg, Denmark.)

## Nervous System Dysregulation

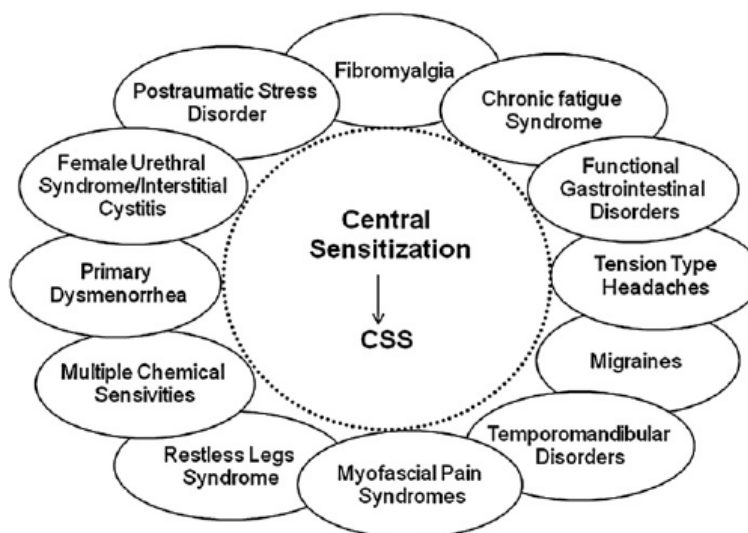


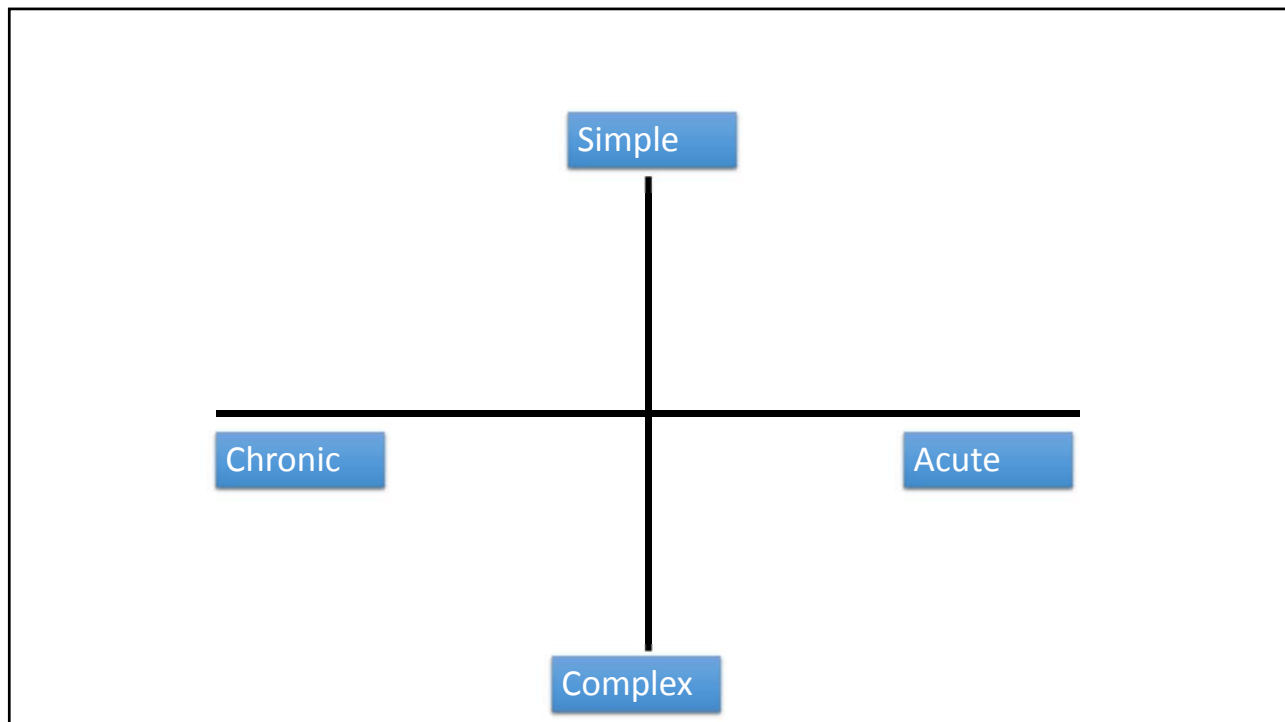
Slide by Sophia Deborah Erez © 2008

\*adapted from a slide by Elaine Miller-Karas.

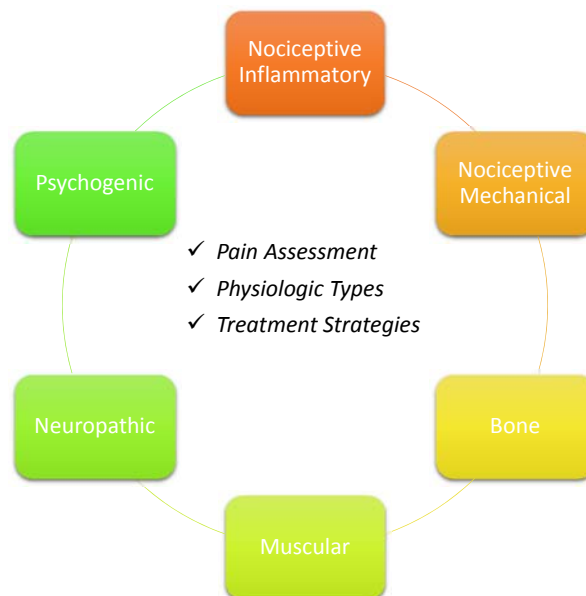
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## Central Sensitization

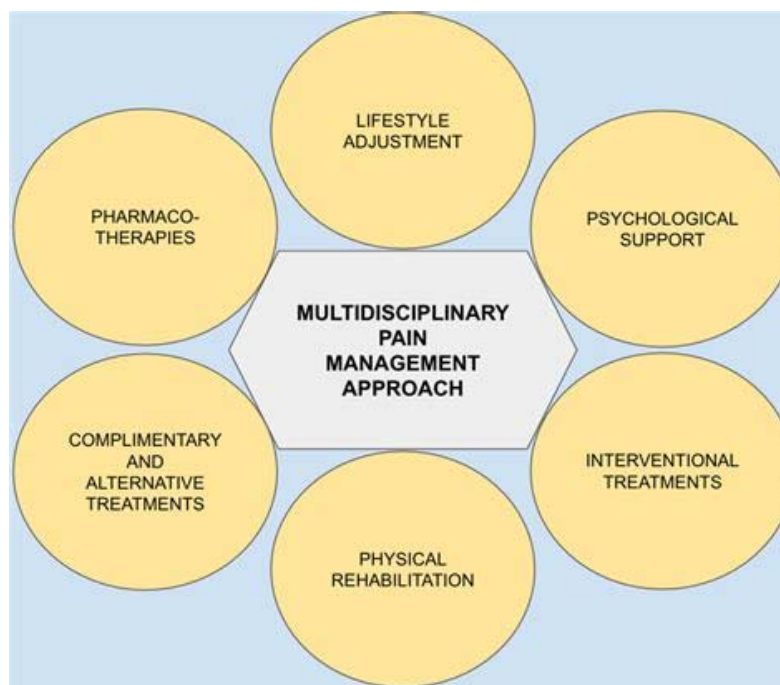




## Pain Types by Physiology



Pain Treatments need to match the Patient's Pain!





# Pharmacotherapy

## Inflammatory Pain

Nociceptive  
Inflammatory

Nociceptive  
Mechanical

Neuropathic

Bone

Muscular

Psychogenic

### Diagnosis

- Clinical setting
  - Postoperative
  - Trauma
  - Infection
  - Arthritis
- Distribution
  - Joints
  - Area of infection or trauma
  - Surgical incision
- Quality
  - Aching
  - Throbbing
  - Worse with movement
- Physical findings
  - Warm
  - Red
  - Swollen

### Drug Management

- NSAID
  - Ibuprofen (Motrin)
  - Naproxen (Aleve)
  - Celecoxib (Celebrex)
- Corticosteroids (if not contraindicated by infection)
- Acetaminophen (Tylenol)

## Neuropathic Pain

Nociceptive  
Inflammatory

Nociceptive  
Mechanical

Neuropathic

Bone

Muscular

Psychogenic

### Diagnosis

- Clinical setting
  - Diabetes
  - MS
  - HIV
  - Spine surgery
- Distribution
  - Stocking/glove
  - Peripheral nerve
  - Nerve root/dermatome
- Quality & timing
  - Burning or shooting
  - Worse at night
- Physical findings
  - Allodynia
  - Cooler temps
  - Neurological deficit

### Drug Management

- Anticonvulsants
  - Gabapentin (Neurontin)
  - Pregabalin (Lyrica)
  - Topiramate (Topamax)
- Antidepressants
  - TCAs: Amitriptyline (Elavil)
  - SNRIs: Duloxetine (Cymbalta)
- Local anesthetics
- Capsaicin

## Bone Pain

Nociceptive  
Inflammatory

Nociceptive  
Mechanical

Neuropathic

Bone

Muscular

Psychogenic

### Diagnosis

- Clinical setting
  - Cancer
  - Compression fracture
  - Sickle cell
  - Osteoporosis
  - Other trauma/fracture
- Distribution
  - Limb
  - Spine
  - Rib
  - Hip
- Quality & timing
  - Incident pain
- Physical findings
  - Tenderness

### Drug Management

- NSAIDs
- Corticosteroids
- Bisphosphonates
- Salmon Calcitonin

## Muscular Pain

Nociceptive  
Inflammatory

Nociceptive  
Mechanical

Neuropathic

Bone

Muscular

Psychogenic

### Diagnosis

- Clinical setting
  - Muscular injury
- Distribution
  - Muscle group
- Quality & timing
  - Aggravated by certain movement or position
  - Better at rest
  - Pulling, ripping, aching, spasm, cramping
- Physical findings
  - Limited ROM
  - Trigger points
  - Muscle tightness
  - Taut bands or knots

### Drug Management

- Cyclobenzaprine (Flexeril)
- Orphenadrine (Norflex)
- Methocarbamol (Robaxin)
- Tizanidine (Zanaflex)

## Psychogenic Pain

Nociceptive  
Inflammatory

Nociceptive  
Mechanical

Neuropathic

Bone

Muscular

Psychogenic

### Diagnosis

- Clinical setting
  - High stress
  - Anxiety
  - Depression
- Distribution
  - Widespread
  - Non-anatomical
- Quality & timing
  - Extreme and dramatic descriptors
- Physical findings
  - Anxious
  - Histrionic
  - Normal physical exam

### Drug Management

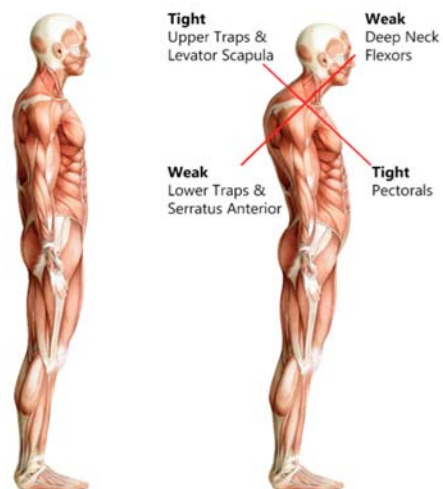
- Antidepressants
  - SSRI
  - SNRI
  - Bupropion (Wellbutrin)
  - Mirtazepine (Remeron)
- Anxiolytics
  - Benzodiazepine
  - Buspirone (BuSpar)
  - SSRI
- Atypical antipsychotics
  - Quetiapine (Seroquel)
  - Risperidone (Zyprexa)

## Rehabilitation Therapies

- Physical Therapy
- Occupational Therapy
- Speech Therapy

## Rehabilitation Therapies: Treatments

- Exercise/Conditioning/Stretching
- E-Stim
- TENS
- Ultrasound treatments
- Dry Needling
- Taping
- Pool therapy



## Interventional Treatments

- Joint injections
- Epidural Injections
- Radiofrequency Ablation
- Neuromodulation

## Psychological Support

- Biofeedback
- Relaxation Training
- Cognitive Behavioral Therapy (CBT)
- Dialectic Behavioral Therapy (DBT)
- Hypnosis
- Trauma based therapies
- Emotionally focused therapies
- Between 60-70% of patients that present to chronic pain clinics have untreated or under treated depression, anxiety, or bipolar disorder.

## Complementary and Alternative Treatments

- Acupuncture
- Chiropractic care
- Yoga
- Nutrition
- Tai Chi
- Massage Therapy

## Summary

- Pain is a complex and multifactorial.
- Our experiences can significantly change our biology and perception of pain for better or worse.
- There are numerous treatment options that are not opioids
- Treatments need to match the Patient's complexity

## Questions

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