

ADDICTION MEDICINE

GOVERNOR'S INSTITUTE

Addiction with Co-Occurring Pain: Understanding the Basics

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Disclosures

- I have no conflicts of interest to disclose

Objectives

- Identify common characteristics of pain and addiction that lead to their frequent co-occurrence
- Develop treatment strategies to treat acute and chronic pain in individuals with the disease of addiction

Addiction



Commentary

CAN ONE BE AN EXPERT IN ADDICTION MEDICINE WITHOUT EXPERTISE IN PAIN MANAGEMENT?

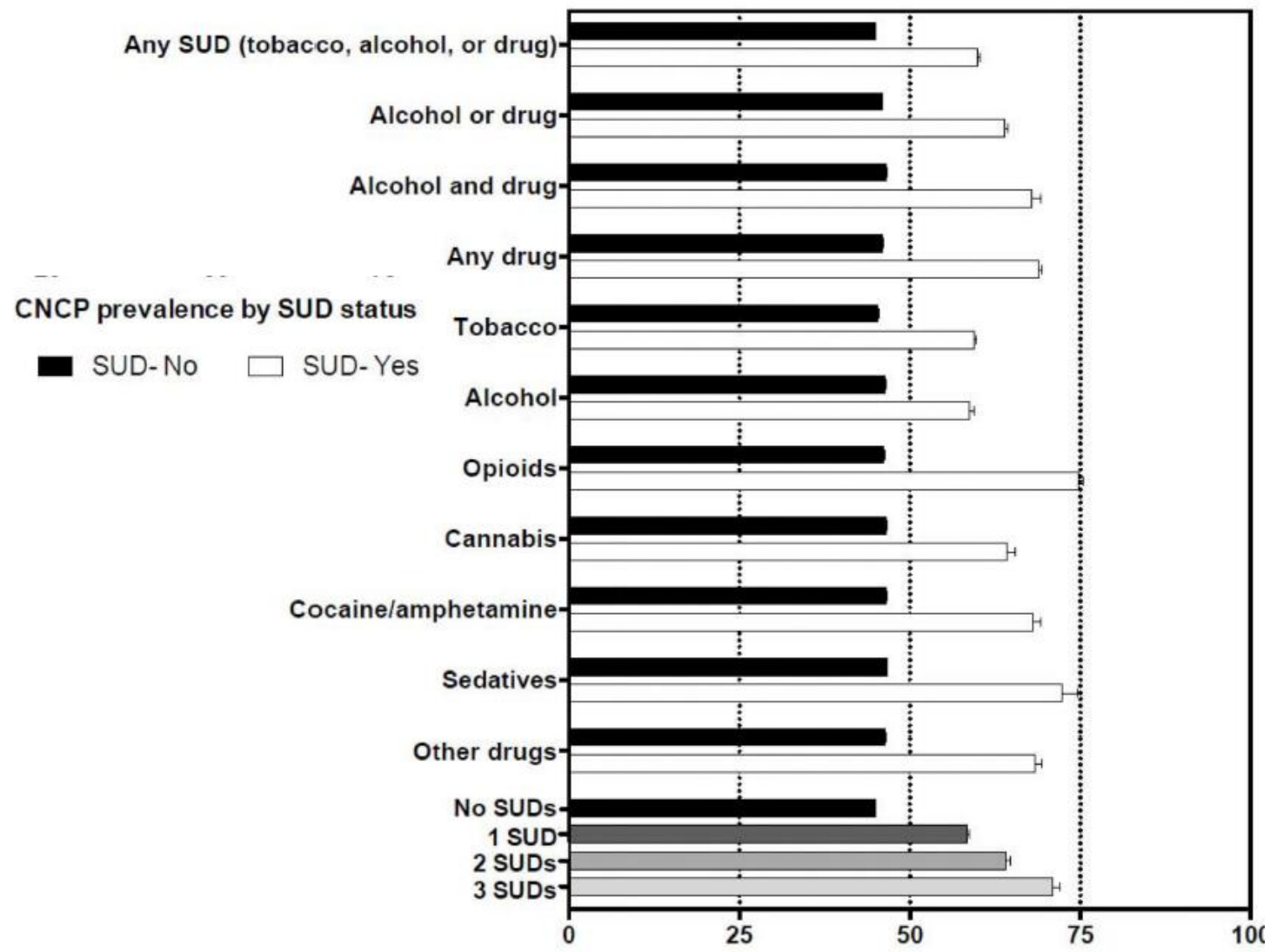
The paper by Caldeiro *et al.* [1] in this issue notes the conundrum in which patients with pain and addiction find themselves: pain complaints are difficult to address

Future research will address these questions, providing a more complete understanding of the interplay between pain and addiction. The treatment of chronic pain with opioids has a modest evidence base [9–11]. Most studies have follow-up periods of less than 6 months, involve highly selected populations and do not include patients with co-occurring addiction. Interven-

“...these findings call for physicians who practice addiction medicine to become expert in the evaluation and treatment of pain.”

Samet JH, Walley AY. [Commentary] Can one be an expert in addiction medicine without expertise in pain management? *Addiction*. 2008;103(12):2006-2007. doi:10.1111/j.1360-0443.2008.02399.x

People with addiction have more pain



951,533 unique adult patients at a large inpatient and outpatient system. Diagnoses determined by ICD 9/10 codes.

John WS, Wu LT. Chronic non-cancer pain among adults with substance use disorders: Prevalence, characteristics, and association with opioid overdose and healthcare utilization. *Drug Alcohol Depend.* 2020;209. doi:10.1016/j.drugalcdep.2020.107902

People with OUD have more pain

In a 2003 study of 390 patients enrolled in a methadone program in Brooklyn, NY:

- Chronic severe pain was experienced by 37% of OTP patients
- Pain of any type or duration during the past week was reported by 80% of OTP patients

Prevalence and Characteristics of Chronic Pain Among Chemically Dependent Patients in Methadone Maintenance and Residential Treatment Facilities. Rosenblum A, Joseph H, Fong C, et al. JAMA. 2003;289(18):2370-8. doi:10.1001/jama.289.18.2370.

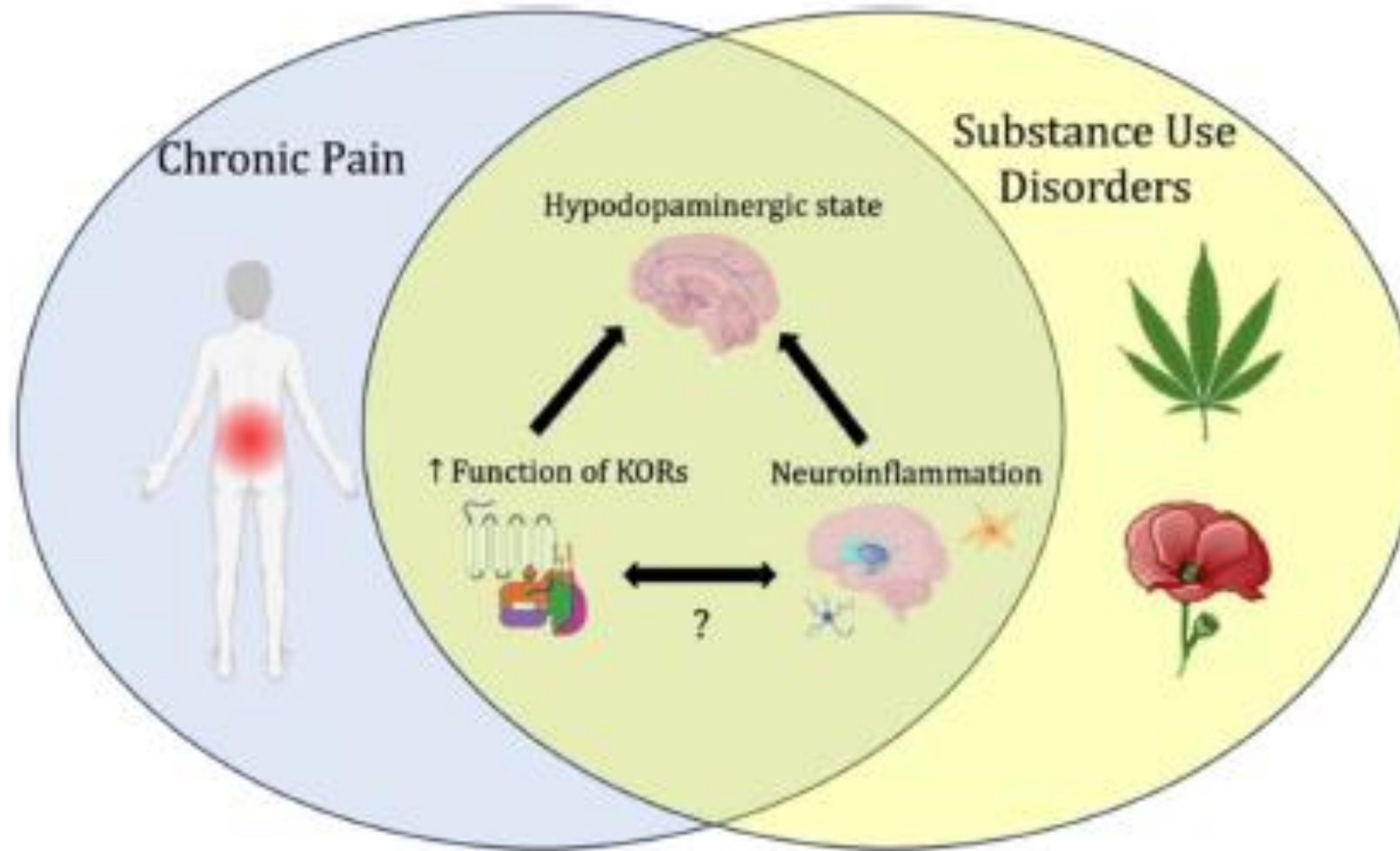
People with pain have worse outcomes

- They relapse sooner
- They drop out of treatment sooner

Caldeiro RM, Malte CA, Calsyn DA, et al. The association of persistent pain with out-patient addiction treatment outcomes and service utilization. *Addiction*. 2008;103(12):1996-2005.

Witkiewitz K, Vowles KE, McCallion E, Frohe T, Kirouac M, Maisto SA. Pain as a predictor of heavy drinking and any drinking lapses in the COMBINE study and the UK Alcohol Treatment Trial. *Addiction*. 2015;110(8):1262-1271.

Chronic pain and SUD commonly coexist



Unveiling the Link Between Chronic Pain and Misuse of Opioids and Cannabis. Dagher M, Alayoubi M, Sigal GH, Cahill CM. Journal of Neural Transmission (Vienna, Austria : 1996). 2024;131(5):563-580. doi:10.1007/s00702-024-02765-3

Common brain regions involved in addiction and chronic pain

- Reward and motivation circuitry
 - ventral tegmental area, nucleus accumbens, and ventral striatum
- Prefrontal cortex
- Anterior cingulate cortex
- Insula
- Amygdala and extended amygdala
- Hippocampus
- Dorsal striatum

Elman I, Borsook D. Common Brain Mechanisms of Chronic Pain and Addiction. *Neuron*. 2016;89(1):11-36. doi:10.1016/j.neuron.2015.11.027

Similar risk factors and symptoms

Risk factors

- Childhood trauma
- Adult trauma
- Historical trauma
- Anxiety
- Depression
- Acute and chronic stress

Symptoms

- Depression
- Anxiety
- Cognitive impairment
- Sleep disturbances
- Difficulty fulfilling major role obligations
- Seeking medications or substances for symptom relief

PAIN

Pain

- Acute pain: Pain < 3 months
- Chronic pain: Pain > 3 months
- Acute pain is a *symptom*
- Chronic pain is a *disease*

Pain

An unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage.

International Association for the Study of Pain (2020)

Pain

An unpleasant sensory and emotional experience associated with, **or resembling that associated with,** actual or potential tissue damage.

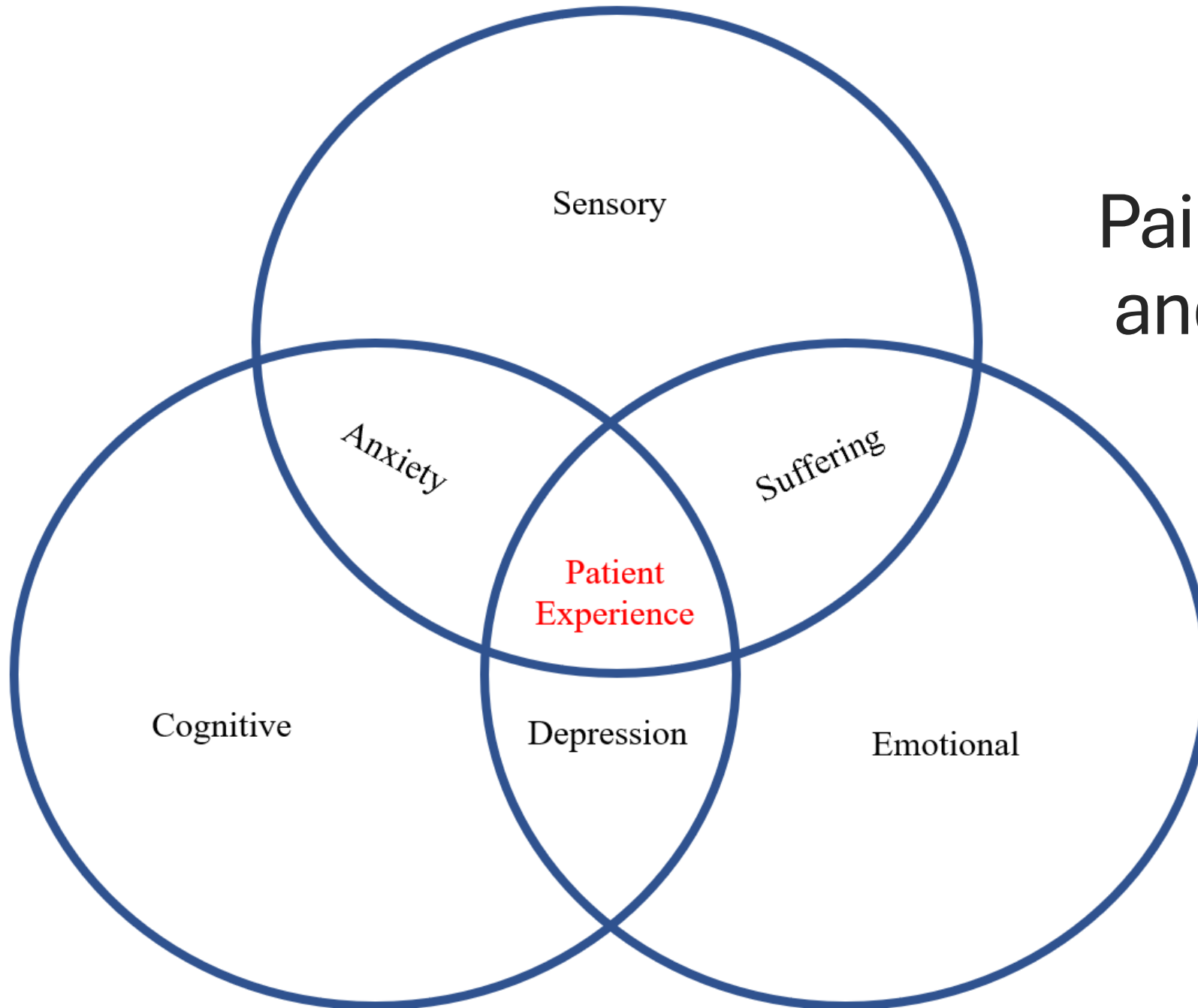
International Association for the Study of Pain (2020)

Pain

and cognitive

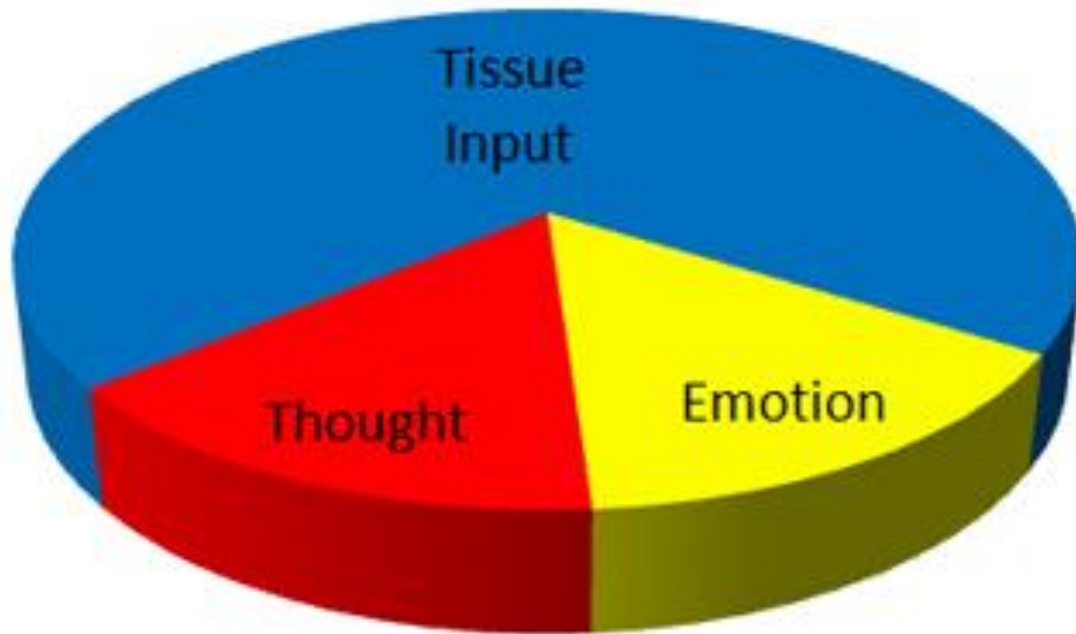
An unpleasant sensory **and emotional** experience associated with, or resembling that associated with, actual or potential tissue damage.

International Association for the Study of Pain (2020)

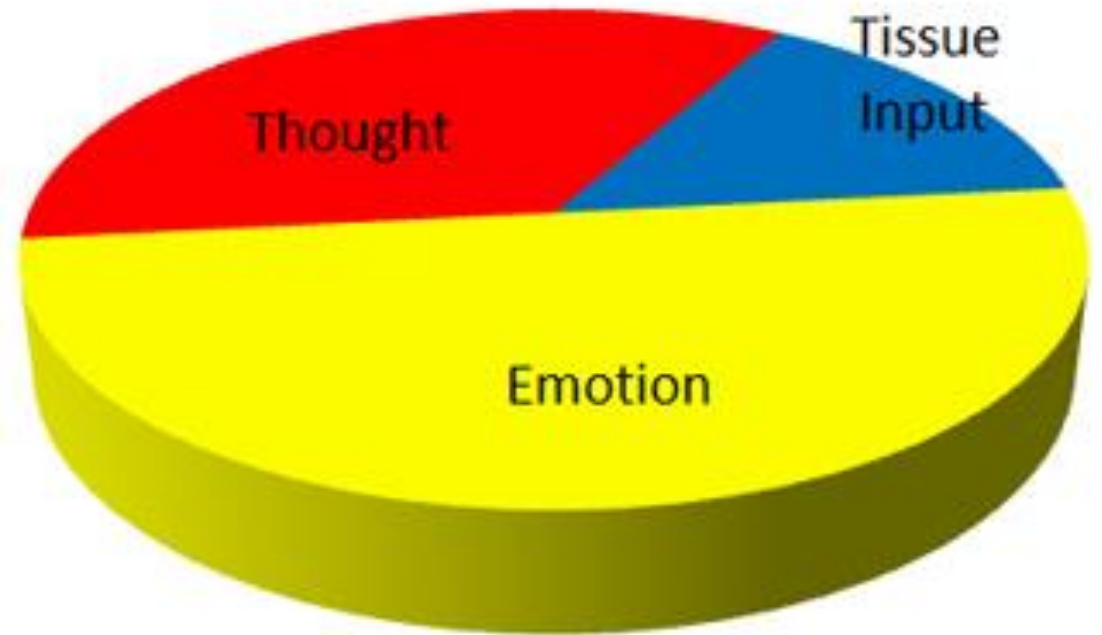


Pain evaluation and treatment in 3D

Thoughts and emotions with acute and chronic pain



Acute pain



Chronic pain

3 mechanisms of pain

- Nociceptive
- Neuropathic
- Nociplastic
 - **Central sensitization**
 - Opioid withdrawal
 - Complex Regional Pain Syndrome
 - Any other pain syndrome not explained by nociceptive or neuropathic

3 mechanisms of pain

- Nociceptive – the way pain is supposed to work
- Neuropathic – **damage** to the nervous system resulting in pain
- Nociplastic – **changes** to the nervous system resulting in pain

Common nociplastic pain syndromes

- Fibromyalgia
- Chronic headaches
- Irritable bowel syndrome
- Chronic neck pain
- Chronic back pain
- Interstitial cystitis
- “My entire body hurts”
- All chronic pain???



Opioids

Opioid receptors and endorphins

- What is the purpose of our endorphins?
- Enable us to achieve a goal (short term)
 - Decrease pain (minimal effect)
 - Increase motivation
 - Enhance confidence
 - Improve reward
 - Reduce depression and anxiety
 - Increase “warmth-liking”
 - Liking warm things
 - Interpersonal bonding

This is our
“success
system”!

Inagaki TK, Ray LA, Irwin MR, Way BM, Eisenberger NI. Opioids and social bonding: Naltrexone reduces feelings of social connection. *Soc Cogn Affect Neurosci*. 2016;epub ahead:1-8. doi:10.1093/scan/nsw006

Inagaki TK, Irwin MR, Eisenberger NI. Blocking opioids attenuates physical warmth-induced feelings of social connection. *Emotion*. 2015;15(4):494-500. doi:10.1037/emo0000088

Schweiger D, Stemmler G, Burgdorf C, Wacker J. Opioid receptor blockade and warmth-liking: Effects on interpersonal trust and frontal asymmetry. *Soc Cogn Affect Neurosci*. 2014;9(10):1608-1615. doi:10.1093/scan/nst152



The problem with opioids

- Mentally impairing
- Delay recovery
- Increase medical costs
- Opioid hyperalgesia
- Double the chance of disability (if prescribed for 7 days or more)
- Increase falls and fractures
- Cardiac
 - Individuals on opioids have 3 times higher incidence of MI c/w age-matched controls
 - Higher incidence of MI than those on Vioxx or Bextra
- GI bleeding
 - Similar to nonselective NSAIDs. More than coxibs.

Citations from previous slide

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- 12.. Carman, W. J., Su, S., Cook, S. F., Wurzelmann, J. I., & McAfee, A. (2011). Coronary heart disease outcomes among chronic opioid and cyclooxygenase-2 users compared with a general population cohort. *Pharmacoepidemiology and Drug Safety*, 20(7), 754–762. <https://doi.org/10.1002/pds.2131>

The problem with opioids

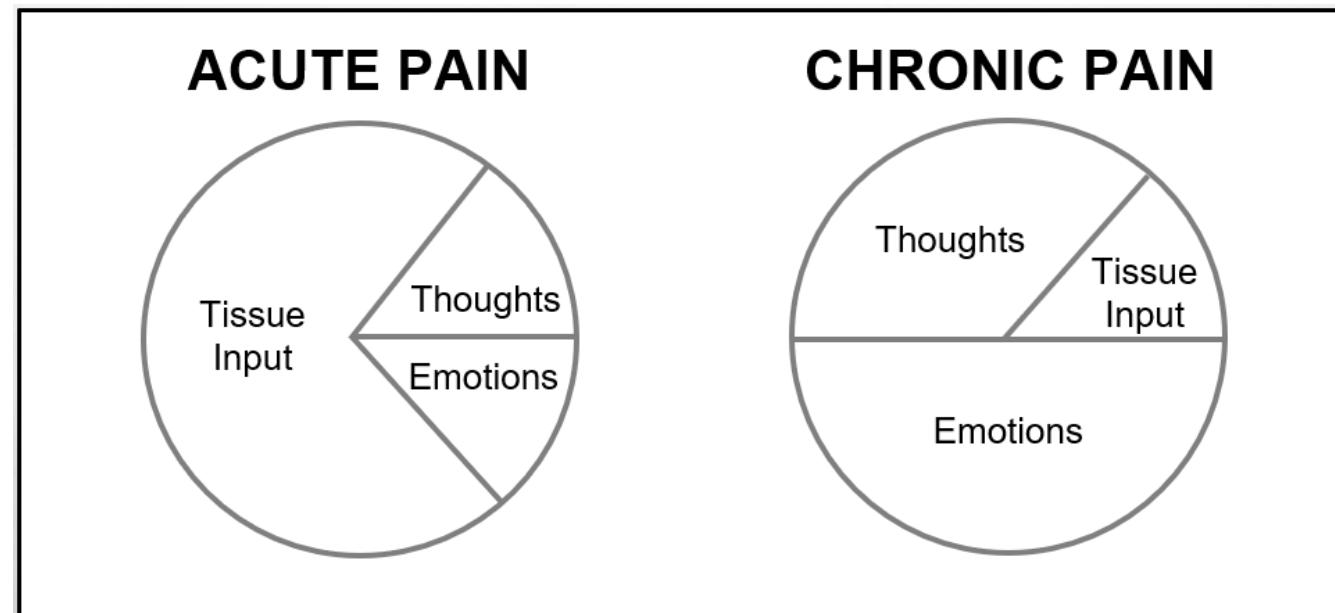
- They are very calming (Initially calming but with tolerance, **anxiety increases**)
- Treat depression (Initially depression improves but after one month, **depression is worse**)
- Diversion (4-24% of prescribed opioids are used non-medically)
- One prescription to an individual will triple the risk that a family member will overdose
- Brain changes
- Addiction

Citations from previous slide

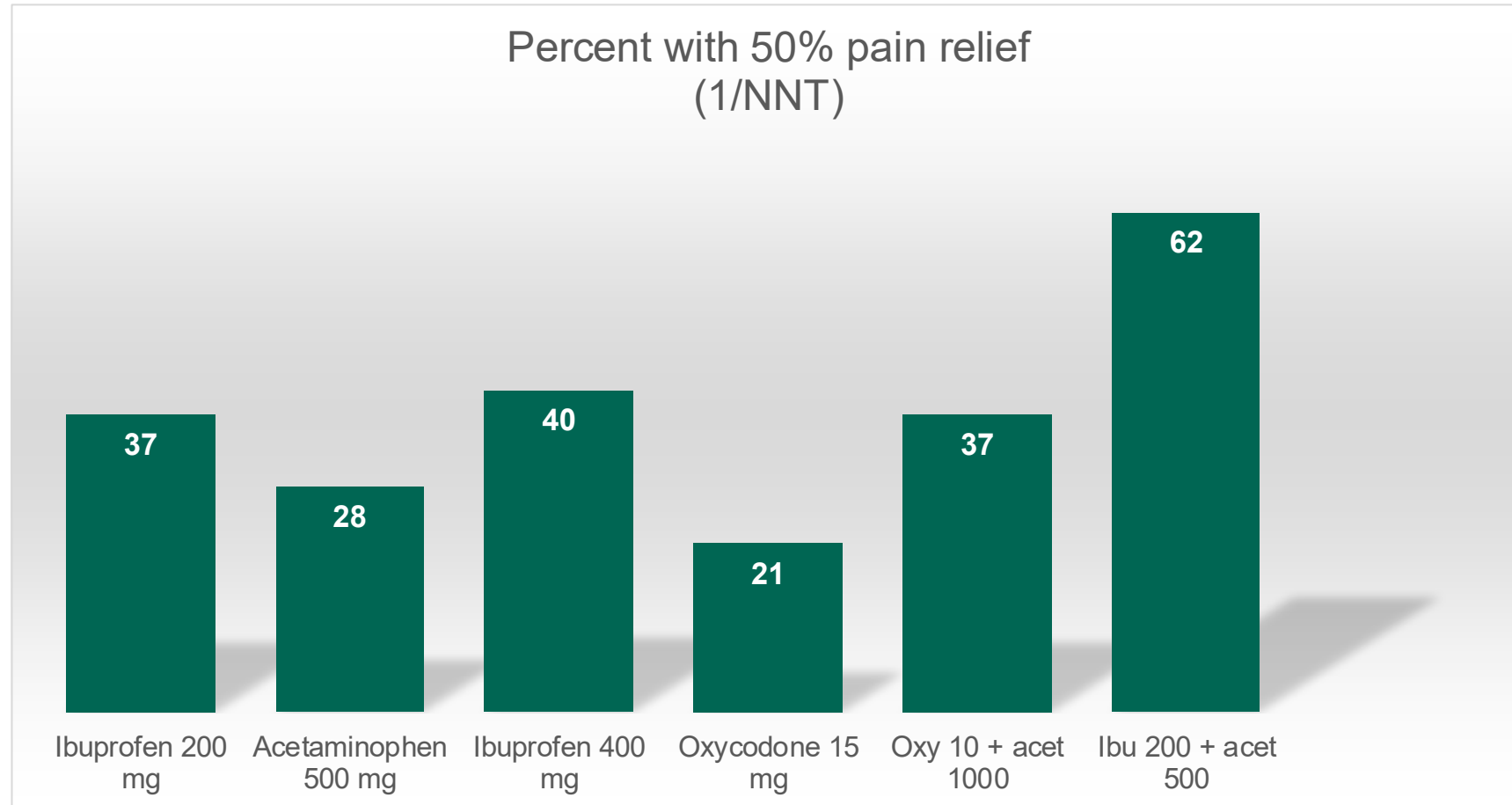
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Opioids and Central Sensitization

- Opioids should probably never be used when there is a significant component of central sensitization!
- Opioids initially relieve the depression and anxiety that drive pain in CS but with ongoing use make these worse and therefor make pain worse



Efficacy of pain medications for acute pain



Moore RA, Derry S, McQuay HJ, Wiffen PJ. Single dose oral analgesics for acute postoperative pain in adults. *Cochrane Database Syst Rev.* 2011;9(9):CD008659. doi:10.1002/14651858.CD008659.pub2.

Derry, C., Derry, S., & Moore, R. (2013). Single dose oral ibuprofen plus paracetamol (acetaminophen) for acute postoperative pain (Review). *Cochrane Database of Systemic Reviews*, (6). <https://doi.org/10.1002/14651858.CD010210.pub2>

Other acute pain treatment

- Topical NSAIDs
- Acupressure
- IM or IV ketorolac
- Distraction (during and after the procedure)
- Virtual reality
- Regional blocks
- Nitrous oxide
- Positive, optimistic, (but honest) talk
- CBT and/or mindfulness
- Pre-op education and/or counseling
- Ice

If your patient is already on buprenorphine or methadone

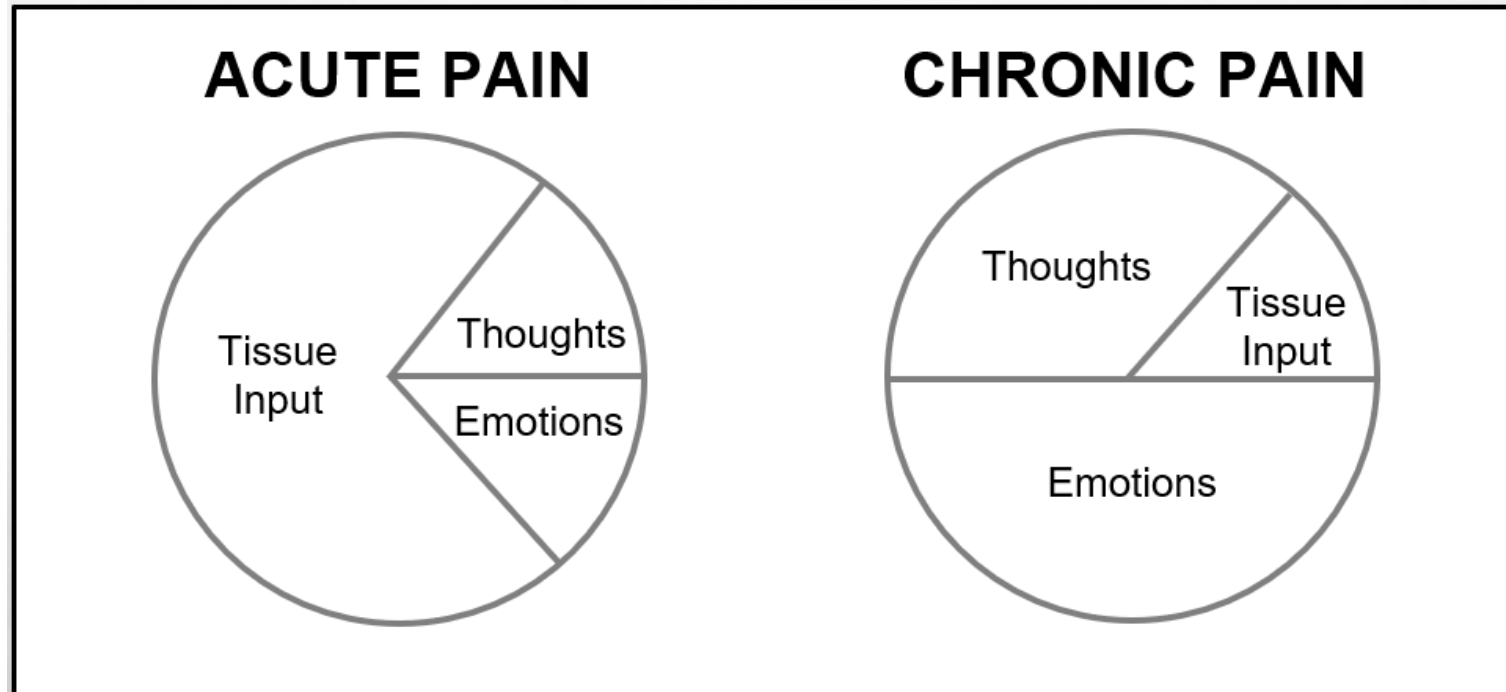
- Continue the same daily dose but divide it and give it tid
 - 1 mg buprenorphine sublingually = 30 mg morphine orally
 - 1 mg methadone = 5-10 mg morphine
- If extra pain medication is needed – use hydromorphone
 - It has a high affinity for the opioid receptor

Neuropathic pain

- Gabapentinoids
- Antidepressants (duloxetine, amitriptyline, etc.)
- Anticonvulsants (carbamazepine, oxcarbazepine)
- Topicals

Chronic pain (nociceptive pain)

- Completely different from acute pain!



Treatment of chronic pain

- Behavioral therapy (CBT, mindfulness, others)
- PT/OT
- Treatment of mood disorders
- Exercise
- Distraction
- Acupuncture, yoga and other alternative therapies
- Amitriptyline, duloxetine, gabapentin and similar drugs may help a little
- Some procedures may be helpful
- Chronic opioids - **buprenorphine**

Interdisciplinary care is critical for significant improvement in chronic pain

Chronic pain guidelines

- **CDC 2022:** “...only consider initiating opioid therapy if expected benefits for pain and function are anticipated to outweigh risks to the patient.”
- **VA/DOD 2022:** “We recommend against the initiation of opioid therapy for the management of chronic non-cancer pain.”
- **VA/DOD 2022:** “For patients receiving daily opioids for the treatment of chronic pain, we suggest the use of buprenorphine instead of full agonist opioids”

Buprenorphine – a special opioid

- It is a powerful opioid pain reliever
- Safer, with no ceiling effect on respiratory depression
- It treats depression that often accompanies chronic pain
- Do NOT develop tolerance
- Do NOT develop opioid hyperalgesia
- Easier to wean
- Many others
- **However:** if you try them on buprenorphine, continue only if there is improvement in pain and function

Most chronic pain is mixed pain

- Nociceptive + nociplastic
 - e.g., severe arthritis pain with minimal changes on x-ray.
- Neuropathic + nociplastic
 - E.g., severe low back pain with radiculopathy. Laminectomy reduces the pressure on the nerve, but the pain continues or worsens.

Summary

- Pain is common in our patients with addiction
- Untreated pain results in worse outcomes
- Pain is treatable

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Updated: December 2025
Online Modules



Overview

<https://elearning.asam.org/products/the-asam-pain-addiction-essentials-online-2>

Thank you!

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