Managing the Complexities of Pain & Addiction

Marci Gambarota, MD
Emergency Medicine Physician, Acupuncturist
Gallup Indian Medical Centre

Andrew J Smith, MDCM
Medical Lead, Interprofessional Pain and Addiction Recovery Clinic (IPARC)
Centre for Addiction and Mental Health
Toronto Academic Pain Medicine Institute

camh

Emergency Medicine in Indigenous and Rural Communities ECHO

December 16, 2024

CAMH Land Acknowledgement

CAMH is situated on lands that have been occupied by First Nations for millennia; lands rich in civilizations with knowledge of medicine, architecture, technology, and extensive trade routes throughout the Americas. In 1860, the site of CAMH appeared in the Colonial Records Office of the British Crown as the council grounds of the Mississaugas of the New Credit, as they were known at the time.

Today, Toronto is covered by the Toronto Purchase, Treaty No. 13 of 1805 with the Mississaugas of the Credit.

Toronto is now home to a vast diversity of First Nations, Inuit and Métis who enrich this city.

CAMH is committed to reconciliation. We will honour the land through programs and places that reflect and respect its heritage. We will embrace the healing traditions of the Ancestors, and weave them into our caring practices. We will create new relationships and partnerships with First Nations, Inuit and Métis and share the land and protect it for future generations.

mental health is health

camh
Shkaabe Makwa

Faculty/Presenter Disclosure

- Faculty: Andrew J Smith, MDCM

- Relationship with commercial interests
  - None
  - Potential for conflict(s) of interest: None

Learning Objectives

At the conclusion of this activity, participants will be able to:

1. Understand the landscape of chronic pain – epidemiology, mechanisms, neuroanatomy

2. Describe current treatments for chronic pain

3. Outline an approach to managing chronic pain in people with substance use disorders

AGENDA

1 What Is Pain

2 A Rational Approach to Assessing Pain and Risk

3 Treating Pain in People with Opioid/Substance Use Disorder

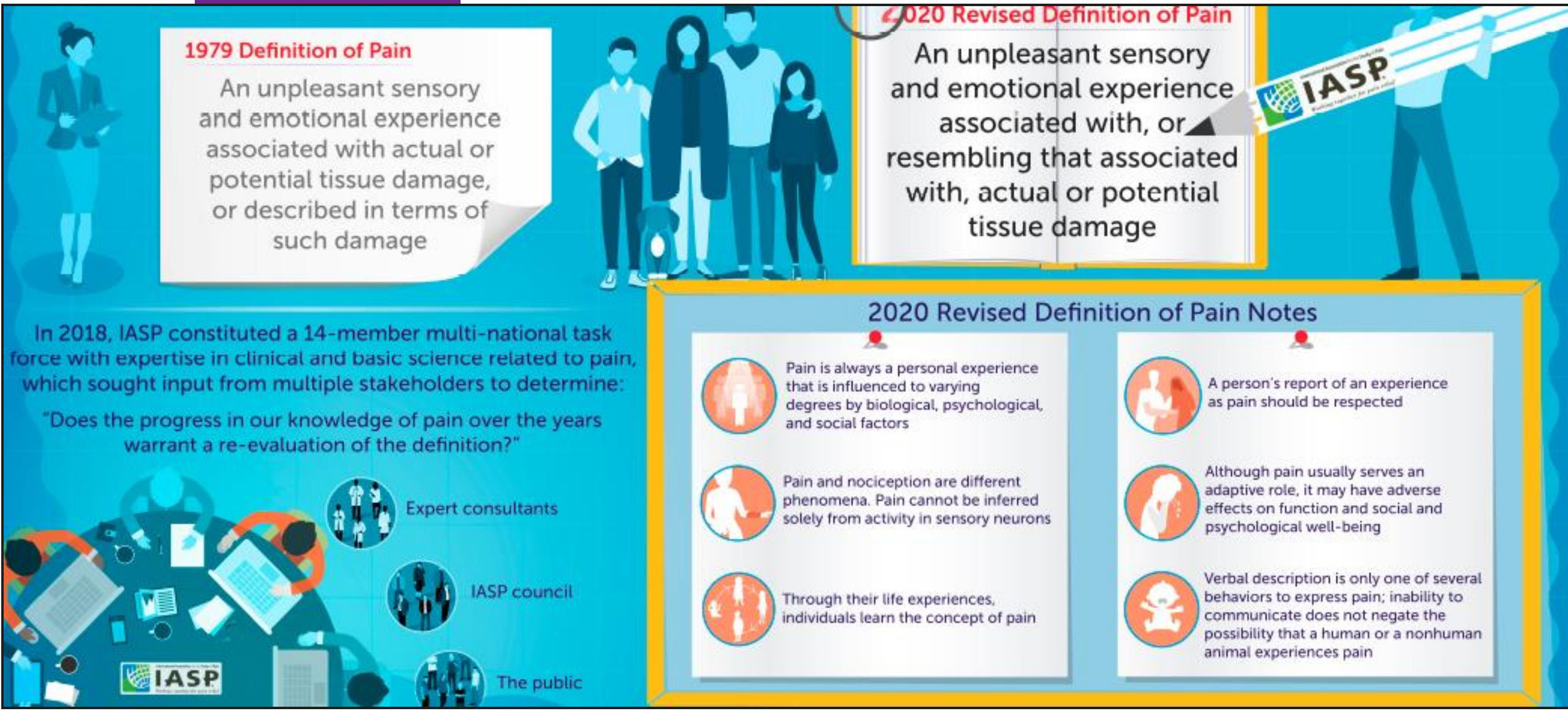
CASE: Ms. LK

- 32 yo woman Anishnaabe woman with chronic daily headaches, throbbing, usually right periorbital (but can shift)
  - + photophobia
  - + nausea
- Reporting severe daily headaches. Prescribed triptans, opioids
- Hydromorph CR 12mg po TID (reports wear-off between doses)
- Borrows oxycocet from friend and buys from street (reports 10-12 tabs per day)
- Presents to ED following unintentional overdose on street fentanyl. Has been using fentanyl on/off for ~ 1 month
- OD reversed by EMS with naloxone (patient used phone-based overdose prevention service)
- In ED: patient was in moderate opioid w/d (COWS 14)
- UDS: fentanyl, metabolites, bromazolam, hydromorphone, oxycodone, ethylglucuronide
- Acetaminophen ~ 4000mg/day
- 3 years ago: 2-3 migraines/month
- FH: Migraine, father EtOH, older brother autism
- History of childhood adversity (witnessed trauma, parent SUD, sibling with developmental disability)

Toronto Drug Checking Service (Nov 16 – Nov 29, 2024)

- 14% of the expected fentanyl samples were known to be **associated with an overdose** – almost all samples contained at least one high-potency opioid (an opioid as strong as or stronger than fentanyl), many in combination with a benzodiazepine-related drug and/or a veterinary tranquilizer
- 2% of the expected fentanyl samples **contained a methylfentanyl-related drug** (up to 10 times stronger than fentanyl)
- 67% of the expected fentanyl samples **contained multiple high-potency opioids**, including fentanyl, fluorofentanyl and/or a methylfentanyl-related drug
- 48% of the expected fentanyl samples **contained fluorofentanyl** (up to 2 times stronger than fentanyl)
- 35% of the expected fentanyl samples contained a benzodiazepine-related drug – 4% contained multiple benzodiazepine-related drugs (bromazolam, desalkylgidiazepam, nordiazepam
- 31% of the expected fentanyl samples contained a veterinary tranquilizer – 21% contained medetomidine and 15% contained xylazine
- 26% of the expected fentanyl samples **did not contain fentanyl** – most of these samples instead contained a methylfentanyl-related drug, some in combination with a benzodiazepine-related drug, fluorofentanyl, and/or a veterinary tranquilizer
- One **expected cocaine drug sample that did not contain cocaine** contained fentanyl, fluorofentanyl, a methylfentanyl-related drug, medetomidine, bromazolam (benzodiazepine-related) and desalkylgidazepam (benzodiazepine-related)

What Is Pain?



What Is Pain?

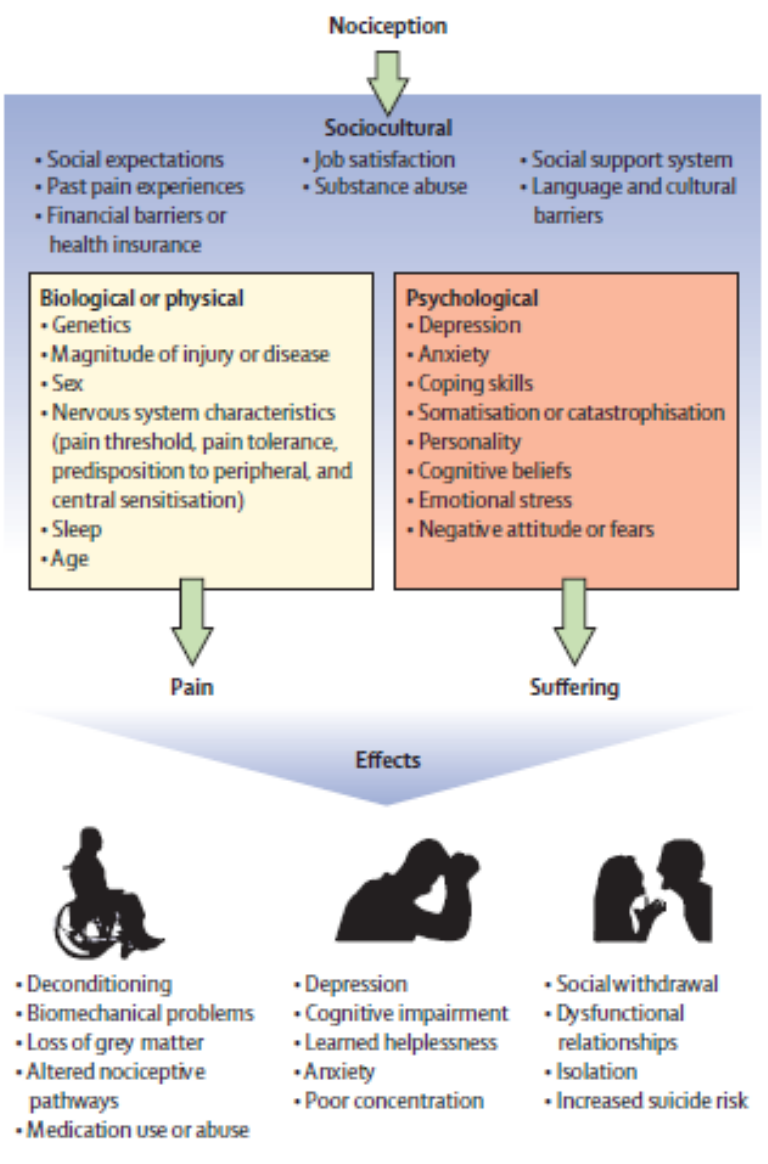
Raja, Srinivasa N.a,* et al. The revised International Association for the Study of Pain definition of pain: concepts, challenges, and compromises, PAIN: September 2020 - Volume 161 - Issue 9 - p 1976-1982
doi: 10.1097/j.pain.0000000000001939

Biopsychosocial Model of Pain

Pain and disability are multidimensional, dynamic interactions among biological, psychological and social factors that reciprocally influence each other

Effects

- Impacts work, finances → homelessness (47-63%)
- Impacts relationships, self-esteem
- Reduced life expectancy
- Worst QoL compared to other chronic dx
- Mood and anxiety disorders 2-10x more prevalent vs general population
- Increased risk of suicide (2-3x)
- Increased divorce rate, social isolation
- Increased risk of problematic substance use



Cohen SP et al. Chronic pain: an update on burden, best practices, and new advances. *Lancet*. 2021;397(10289):2082-2097. doi:10.1016/S0140-6736(21)00393-7

Pain is Common

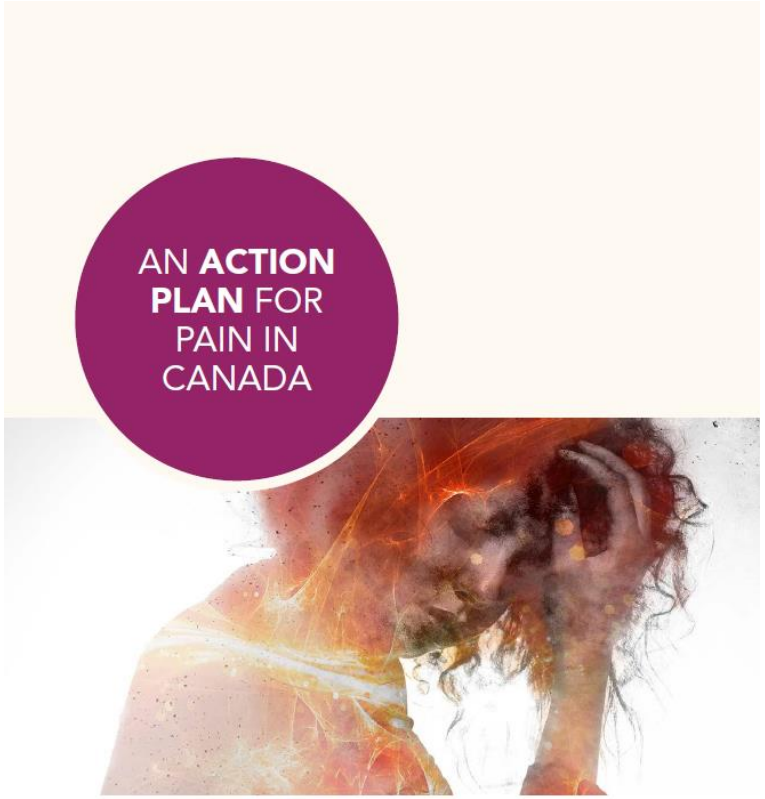
- Prevalence of chronic pain in the adult population may be 20-25%
  - Of which ~50% experience moderate and 14% experience severe chronic pain daily or most days of the week
  - ~ 51 million people in the US

- Disproportionate burden
  - Children, seniors, racialized populations, patients with mental health and SUDs, veterans, women, people with disabilities, women, indigenous peoples, LGBTQ2S, etc

Schopflocher, D., Taenzer, P., & Jovey, R. (2011). The prevalence of chronic pain in Canada. *Pain Research & Management, 16*(6), 445-450.

Canadian Pain Task Force Report 2019

Canadian Pain Task Force 2019 - 2021



1. Enable coordination, collaboration, and leadership across Canada
2. Improve access to timely, equitable, and person-centred pain care
3. Increase awareness, education, and specialized training for pain
4. Support pain research and strengthen related infrastructure
5. Monitor population health and health system quality
6. Ensure equitable approaches for populations disproportionately impacted by pain

OUTCOME: Prevention of chronic pain, improved quality of life for people living with pain, and fewer associated impacts on individuals, families, community, and society.

Health Canada Santé Canada

Canada

An Unequal Burden: Pain in People Who Use Drugs

- Much higher prevalence of chronic pain in PWUD: 31-55%
- Highly stigmatized within the healthcare system
- Vicious cycle: unmanaged pain → problematic substance use→ further health impacts→ more pain
- Access to pain management for this population would help diminish pain and provide window of opportunity to address problematic substance use
- Overemphasis on biomedical aspect of care
- Poor access to psychosocial interventions
- Social context for understanding, treating CP is poorly recognized, underestimated, poorly managed
- +++ accentuated in marginalized populations
- +++ risk with accessing street opioids

Heimer, R., Zhan, W., & Grau, L. E. (2015). Prevalence and experience of chronic pain in suburban drug injectors. *Drug and alcohol dependence*, *151*, 92–100.
Alford, D. P., German, J. S., Samet, J. H., Cheng, D. M., Lloyd-Travaglini, C. A., & Saitz, R. (2016). Primary Care Patients with Drug Use Report Chronic Pain and Self-Medicate with Alcohol and Other Drugs. *Journal of General Internal Medicine*, *31*(5), 486–491.
Voon, P., Callon, C., Nguyen, P., Dobrer, S., Montaner, J., Wood, E., & Kerr, T. (2014). Self-management of pain among people who inject drugs in Vancouver. *Pain Management, 4*(1), 27-35.

An Unequal Burden: Pain in People Who Use Drugs

➢CPTF conducted rapid review through Drug Safety and Effectiveness Network to identify best practices for managing chronic pain with concurrent mental health and/or SUD

➢Looked at all clinical practice guidelines and literature:

- Limited number of high-quality guidelines with specific and consistent recommendations
- More recommendations for Mental Health conditions vs Substance Use Disorders (SUDs)
- Very high level (eg. “provide medical management”) without specific interventions (eg “provide a trial of SSRIs”)
- Focused disproportionately on patients with OUD vs other SUDs
- Recommendations for pharmacotherapy → heavily weighted on opioid agonist treatment
- Much of the best practice guidance focused on avoiding interventions that may be contraindicated in the concurrent population …e.g. avoiding abstinence-based management

- >>> FUTURE RESEARCH PRIORITY

Canadian Pain Task Force, Working Together to Better Understand, Prevent, and Manage Chronic Pain: What We Heard. Health Canada. October 2020

Alcohol, Opioids and Pain

- Alcohol has been recognized as an analgesic for thousands of years, and has been offered to patients for this purpose for medical procedures
- Laudenum – tincuture of opium
- Among all adults diagnosed with SUD→ 4/5 = AUD
- AUD is often comorbid with chronic pain
  - > ½ of individuals seeking treatment for AUD report significant recurring pain with greater prevalence in women (63%) vs men (54%)
  - Chronic pain is strong predictor of relapse in problem drinkers
- AUD → 29% lifetime prevalence; 35-40% long-term remission rate

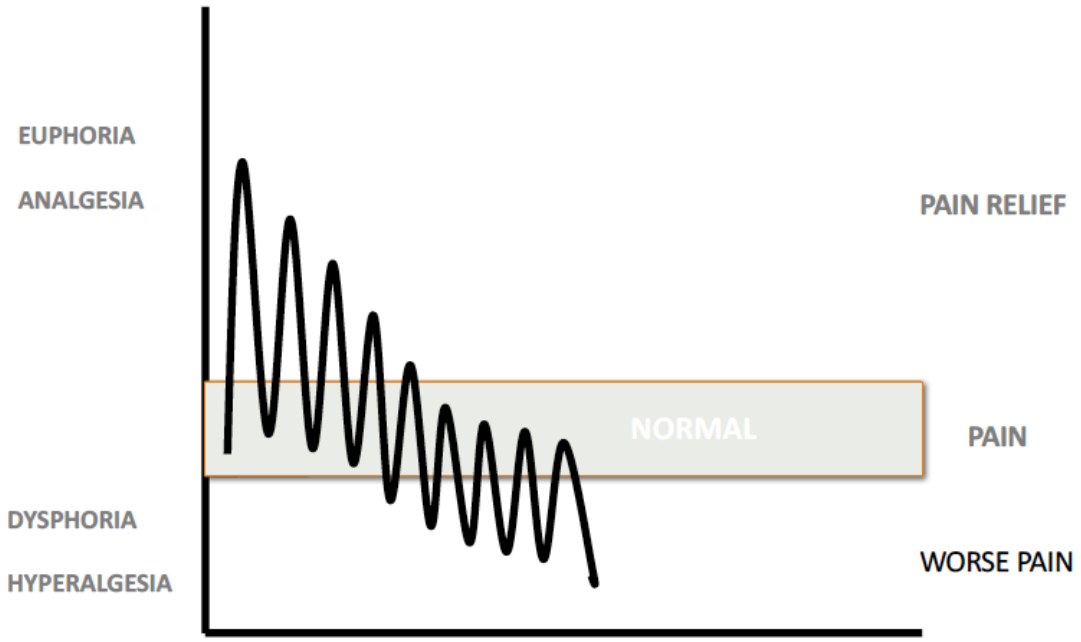
Bissoneault J et al. Alcohol. 2019 Mar;75:47-54. doi: 10.1016/j.alcohol.2018.05.009. Epub 2018 May 25. PMID: 30359794.

Alcohol Use Disorder as a Chronic Pain Condition

- Bidirectional relationship: alcohol modulates pain; AND acute and chronic pain influence alcohol-related behaviours

- Acute alcohol use → analgesic
- Chronic alcohol use → hyperalgesic

- Likely a manifestation of common neuronal circuits



Alcohol Use Disorder as a Chronic Pain Condition

- Non-medical use of prescription medications is highest among patients with a history of binge-drinking
- 16-25% of chronic pain patients drink heavily or have AUD
- 43-73% of individuals with AUD have moderate to severe pain
- In a recent large study of adult primary care patients who screened positive for aberrant drug related behaviours (illicit drug use, prescription meds, alcohol use)
  - 87% of those who screened positive suffered from chronic pain
  - Of these 79% of the individuals identified self-medication for pain as the reason for heavy alcohol use
- Frequency of using alcohol to manage pain was predictive of drinking problems up to three years later among women, and of health problems and injury among men

Witkiewitx K et al Alcohol Clin Exp Res 2018
Alford DP et al. *J Gen Intern Med*. 2016;31(5):486-491. doi:10.1007/s11606-016-3586-5
Brennan et al,. Addiction. 2005 Jun;100(6):777-86. doi: 10.1111/j.1360-0443.2005.01074.x. PMID: 15918808.

Chronic Pain in People with Substance Use Disorder
Pain Treatment = Prevention

UNTREATED CHRONIC PAIN IS CONNECTED TO THE OPIOID OVERDOSE CRISIS

- People who use substances and their families often point to the lack of appropriate pain care as a contributor to their substance use and an impediment to successful treatment and recovery.. i.e. ***TREAT THE PAIN!***

- ***Substance use treatment is often poorly connected to other systems (primary care, tertiary multidisciplinary pain treatment centres) and lack of coordination can become barriers to care and increase risk of substance use-related harms***

- ***Efforts to address opioid-related harms have led to serious and unintended consequences for some people living with chronic pain***

Chronic Pain in Canada: Laying a Foundation for Action. Canadian Pain Task Force. June 2019. https://www.canada.ca/en/health-canada/corporate/about-health-canada/public-engagement/external-advisory-bodies/canadian-pain-task-force/report-2019.html

2024 CANADIAN OPIOID PRESCRIBING GUIDELINE

GOOD PRACTICE STATEMENT: Patients with chronic non-cancer pain prescribed opioids should not be engaged in forced/involuntary tapering.

RECOMMENDATION 1

In people living with chronic non-cancer pain the panel recommends optimizing available nonopioid pharmacotherapy and non-pharmacological therapy prior to considering a trial of opioids

[STRONG recommendation]

Remarks:
There are several non-opioid interventions that may be helpful for people living with chronic pain.

RECOMMENDATION 2

In people living with chronic pain without current or past substance use disorder, without other current or past psychiatric disorders, and without a history of opioid overdose, who have, despite optimization of available nonopioid therapy, persistent pain they experience as problematic, the panel recommends discussing a trial of opioids

[STRONG recommendation]

Remarks:
This recommendation is consistent with many patients not receiving a trial of opioids. By a trial of opioids, we mean initiation, titration, and monitoring of response, with discontinuation of opioids if important improvement in pain or function is not achieved within 2 months.

RECOMMENDATION 3

In people with chronic non-cancer pain, w have persistent problematic pain despite optimization of available nonopioid therapy and have a history of opioid overdose, the panel recommends against offering a trial of opioids

[STRONG recommendation]

RECOMMENDATION 4

In people with chronic non-cancer pain, w have persistent problematic pain despite optimization of available nonopioid therap and have an active alcohol use disorder, t panel recommends against offering a trial of opioids

[STRONG recommendation]

RECOMMENDATION 5

In people living with chronic non-cancer pain with a history of any substance use d order who have persistent problematic pa despite optimization of available nonopioi therapy, the panel suggests against offeri a trial of opioids

[CONDITIONAL recommendation]

Remarks:
A conditional recommendation conveys the importance of considering patient's unique situation and represents a mandate for shared decision-mak to ensure all decisions are consistent with each individual patient's values and preferences.

RECOMMENDATION 6

In people living with chronic noncancer pain with a history of mental illness or an active mental health disorder, who have persistent problematic pain despite optimization of available nonopioid therapy, the panel suggests against offering a trial of opioids

[CONDITIONAL recommendation]

Remarks:
A conditional recommendation conveys the importance of considering patient's unique situation and represents a mandate for shared decision-making to ensure all decisions are consistent with each individual patient's values and preferences.

RECOMMENDATION 7 & 8

In people living with chronic noncancer pain undergoing a trial of opioids, the panel suggests avoiding doses higher than 80mg morphine equivalents daily

[CONDITIONAL recommendation]

and seldom if ever exceeding doses higher than 150 mg morphine equivalents daily

[STRONG recommendation]

Remarks:
- A conditional recommendation conveys the importance of considering patient's unique situation and represents a mandate for shared decision-making to ensure all decisions are consistent with each individual patient's values and preferences.
- There will be people who would accept or not the increased risk of harms associated with a dose higher than 80 mg morphine equivalents daily to potentially achieve improved pain control.
- Rarely will some patients gain important benefit at a dose of more than 150mg morphine equivalents daily. Discussion with a colleague and a documentation of the rationale regarding the possibility of increasing the dose to more than 150mg morphine equivalents daily may be warranted.
- These recommendations do not apply to people already receiving long term opioid therapy.

RECOMMENDATION 9

In people living with chronic non-cancer pain, currently prescribed opioids and experiencing persistent problematic pain and/or problematic side effects, the panel suggests rotation to other opioids

[CONDITIONAL recommendation]

Remarks:
- A conditional recommendation conveys the importance of considering patient's unique situation and represents a mandate for shared decision-making to ensure all decisions are consistent with each individual patient's values and preferences.
- When successful, improved response to opioids should be apparent within 2 months of rotation. In consultation with the patient, rotation may be done in parallel with, and as a way of facilitating, dose reduction.

RECOMMENDATION 10

In people living with chronic non-cancer pain on long term stable opioid therapy for chronic non-cancer pain, the panel recommends that clinicians initiate a discussion offering a trial of opioid tapering to the lowest effective dose, potentially including discontinuation and, if the offer is declined, repeating the offer every 6 to 12 months

[STRONG recommendation]

Remarks:
Some patients who agree to opioid tapering may experience a substantial increase in pain or decrease in function that persists for more than one month after a small dose reduction; tapering may be paused and potentially abandoned in such patients.

RECOMMENDATION 11

For people living with chronic noncancer pain who are engaged in voluntary opioid tapering and experiencing challenges, we suggest engagement in multidisciplinary support

[CONDITIONAL recommendation]

Remarks:
- A conditional recommendation conveys the importance of considering patient's unique situation and represents a mandate for shared decision-making to ensure all decisions are consistent with each individual patient's values and preferences.
- Multidisciplinary support may include alternate analgesia; behavior change and active medication management. Health professionals whom physicians can access according to their availability include, but are not limited to, a primary care physician, a nurse, a pharmacist, a physical therapist, a chiropractor, a kinesiologist, an occupational therapist, a substance use disorder specialist, a psychiatrist, and a psychologist.

McMaster University

Michael G. DeGroote NATIONAL PAIN CENTRE

Untreated Pain: A Global Health Problem

- Inadequately treated acute pain (following surgery or trauma) → 25% burden of chronic pain
- Reduced mobility
- Impaired immunity
- Reduced concentration
- Anorexia
- Sleep disturbances
- Social isolation
- Dependence on caregivers
- Impaired relationships with friends and family
- 4x risk of depression and anxiety
- **AT RISK: poor, elderly, mentally ill, children, women, racial/ethnic minorities**

Mechanism of Normal Pain

Pain is the interpretation of what you feel after:

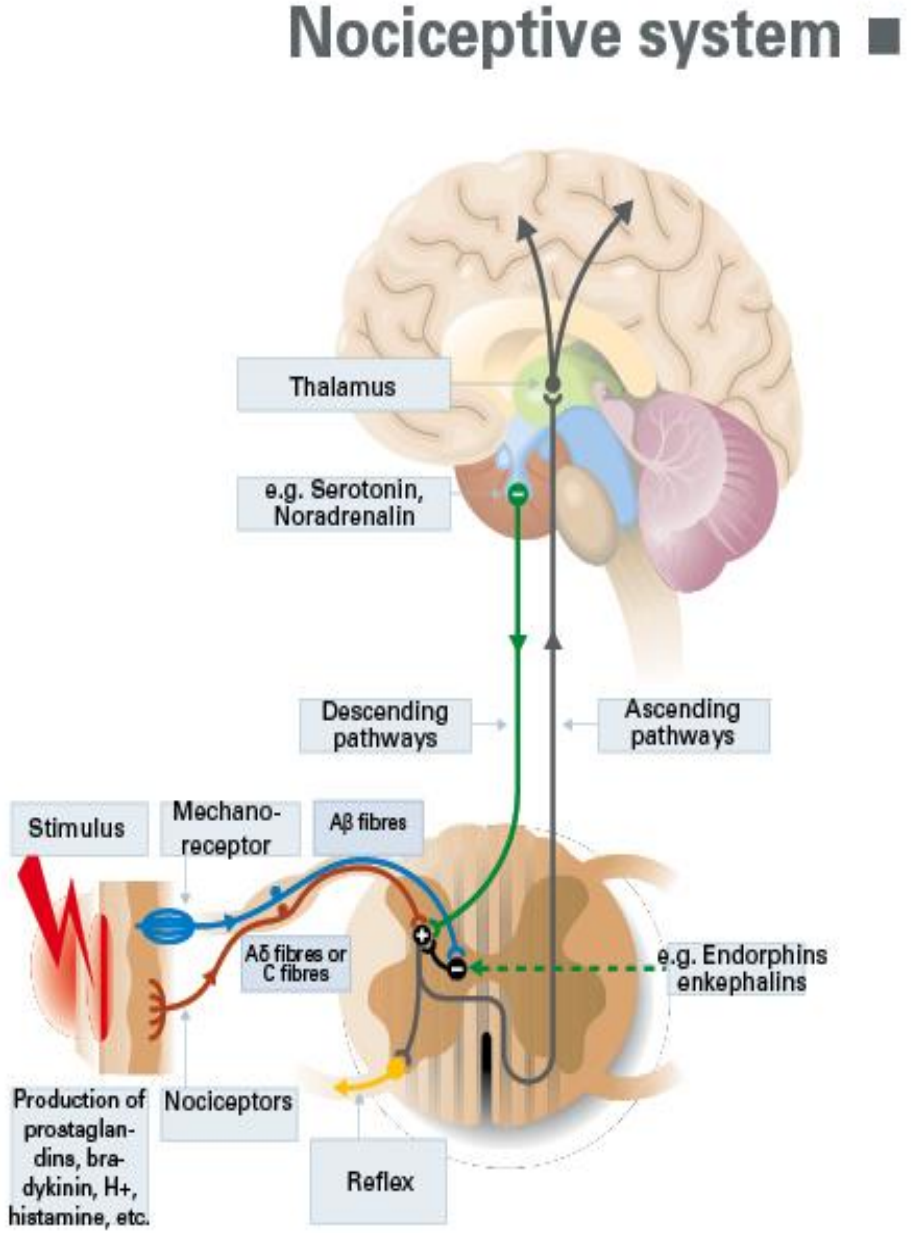
Up (transmission)

&

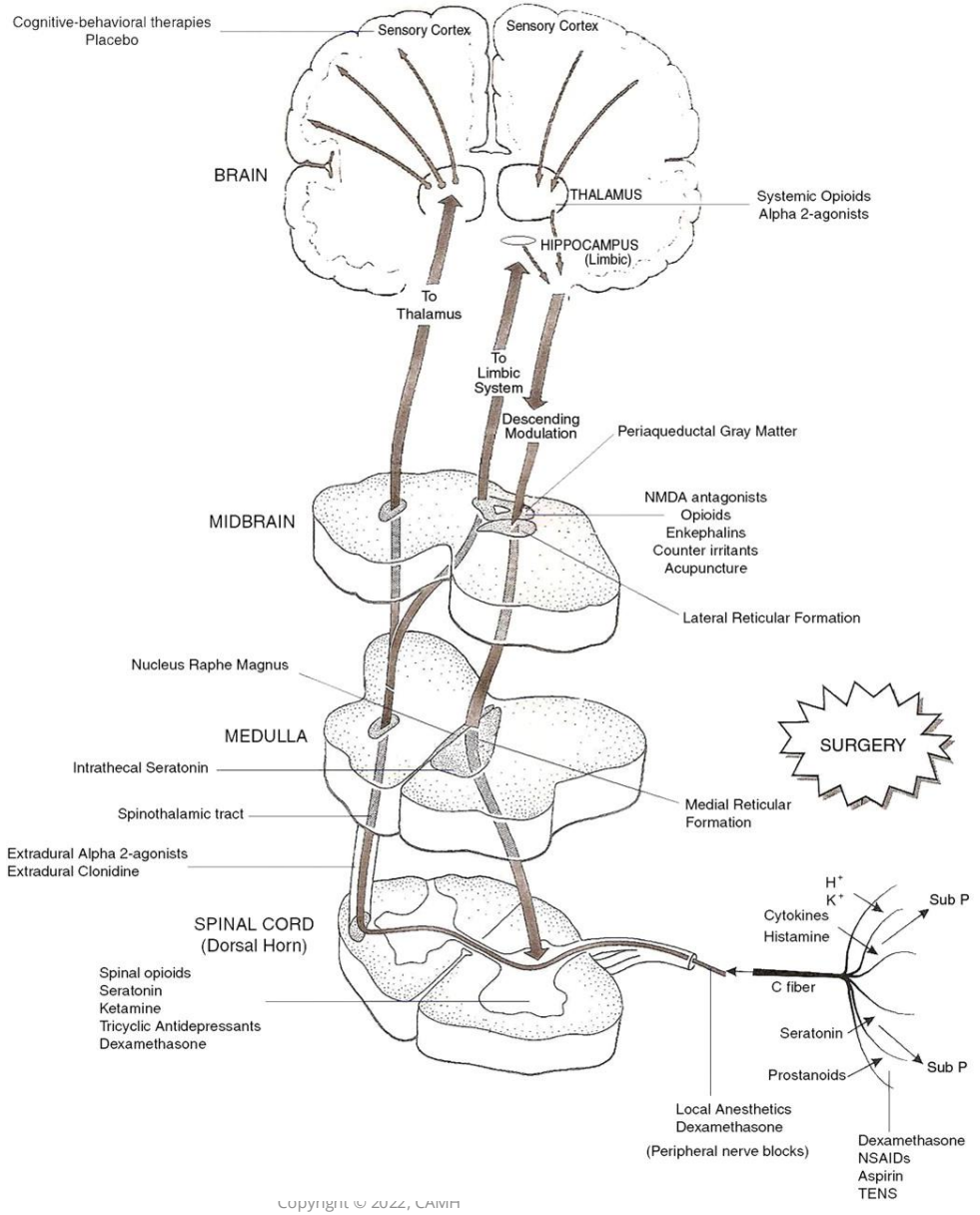
Down (modulation)

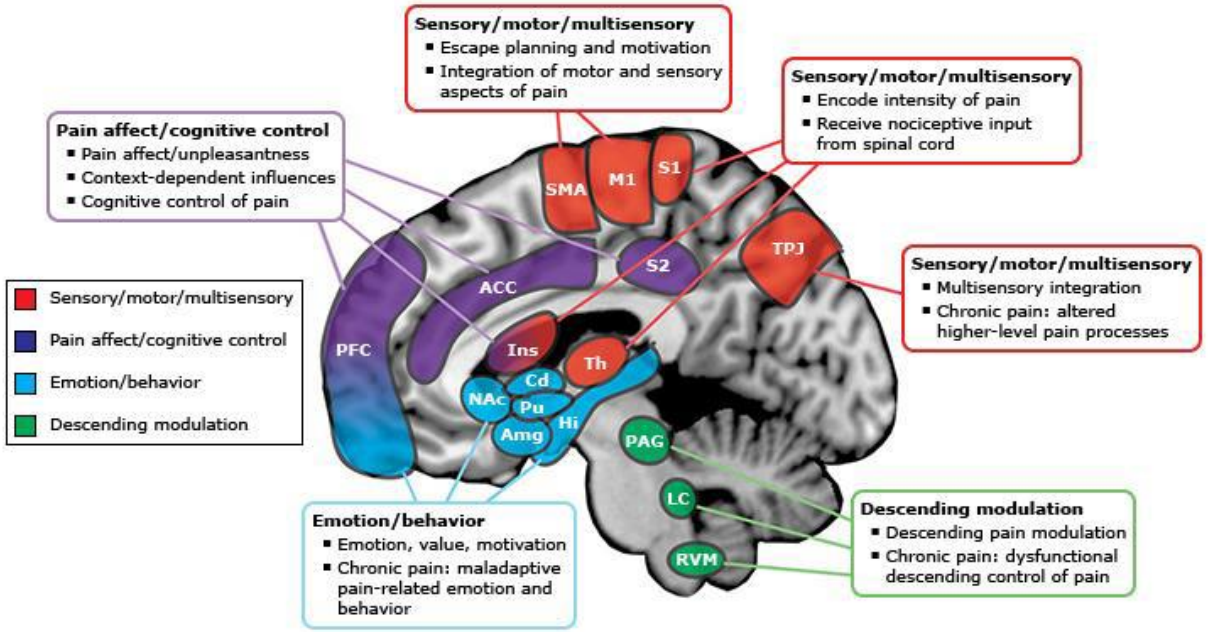
&

“Processing”



The Experience of Pain





1. Transduction
2. Transmission
3. Modulation
4. Perception

UW ECHO, 2020

Acute vs Chronic pain

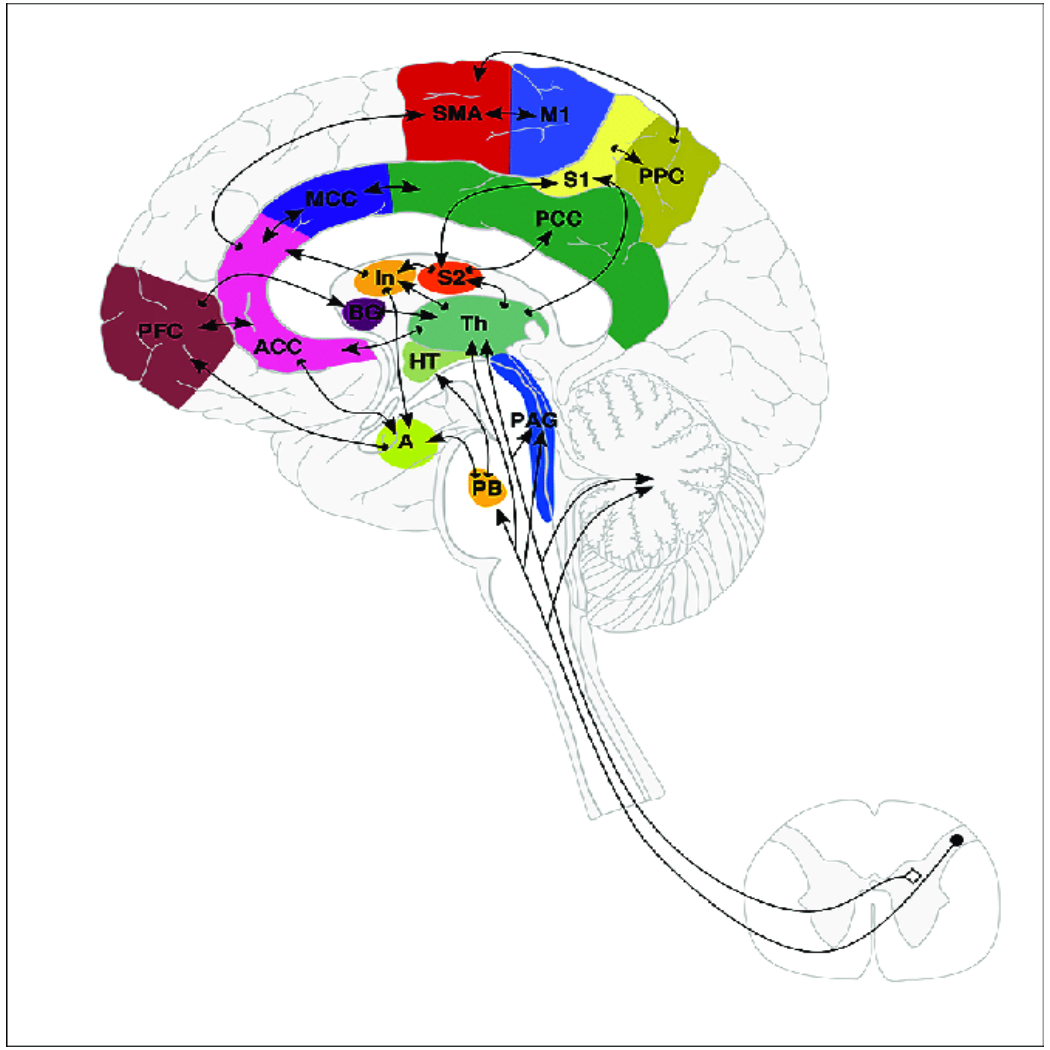
- Acute pain is a vital, protective mechanism that permits us to live surrounded by potential danger
- Chronic pain is not helpful and is a **chronic disease condition** (like diabetes, HBP)
- Chronic pain persists after the normal expected duration of healing (3-6months) and is a brain signal problem, like an alarm that is stuck on
- Senitization: peripheral; central (spinal, including glial cell component; brain – neuroplasticity with cortical reorganization)
- Surgery and opioids don't work well (medications in general may provide <20% of the overall improvement)
- The internal "harm alarm" is stuck in the "on" position

Pain connectome

Brain networks involved in transmission, processing and integration of pain stimuli

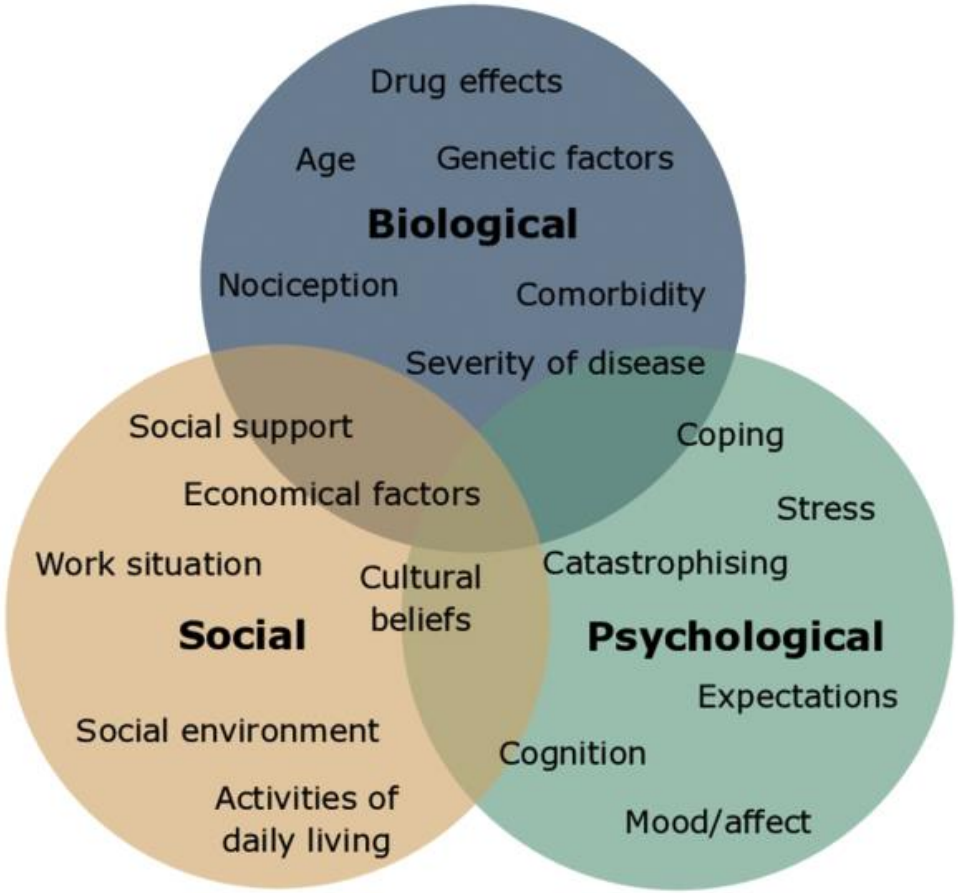
Neuroplastic changes of chronic pain are reinforced by opioid use

- Central processing of **pain shifts from sensory to emotional and cognitive brain areas**
- Incentive salience→ neuroplastic changes in reward and cognitive circuits with continued opioid use→ **preferentially attend to pain and opioid**
- Chemical coping vs active modality participation; **Less rewarding activities (socializing, exercise) are neglected** in favour of more rewarding (opioids)
- HP Axis into overdrive
- "The brain ages 10-20 years"



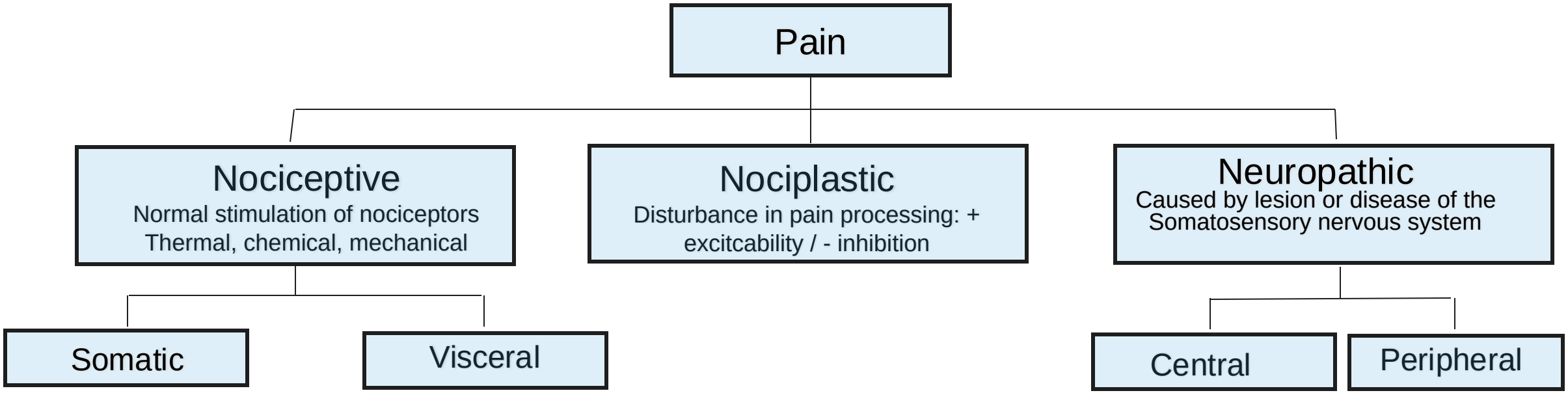
Kucyi A, Davis KD. The Neural Code for Pain: From Single-Cell Electrophysiology to the Dynamic Pain Connectome. *Neuroscientist*. 2017;23(4):397-414. doi:10.1177/1073858416667716

Biopsychosocial Model of Pain



- Pain is the interpretation of what is going on around us based on MANY inputs (nociception, other senses, stress system, memories, interoception)
- Brain is making predictions based on past experiences and future expectations
  - A person may feel pain without nociception (eg. Phantom limb pain))
  - A person may have nociception without feeling pain
- Nociception is a sensation
- Pain is more than that

Pain Diagnosis: Nociceptive vs. Neuropathic



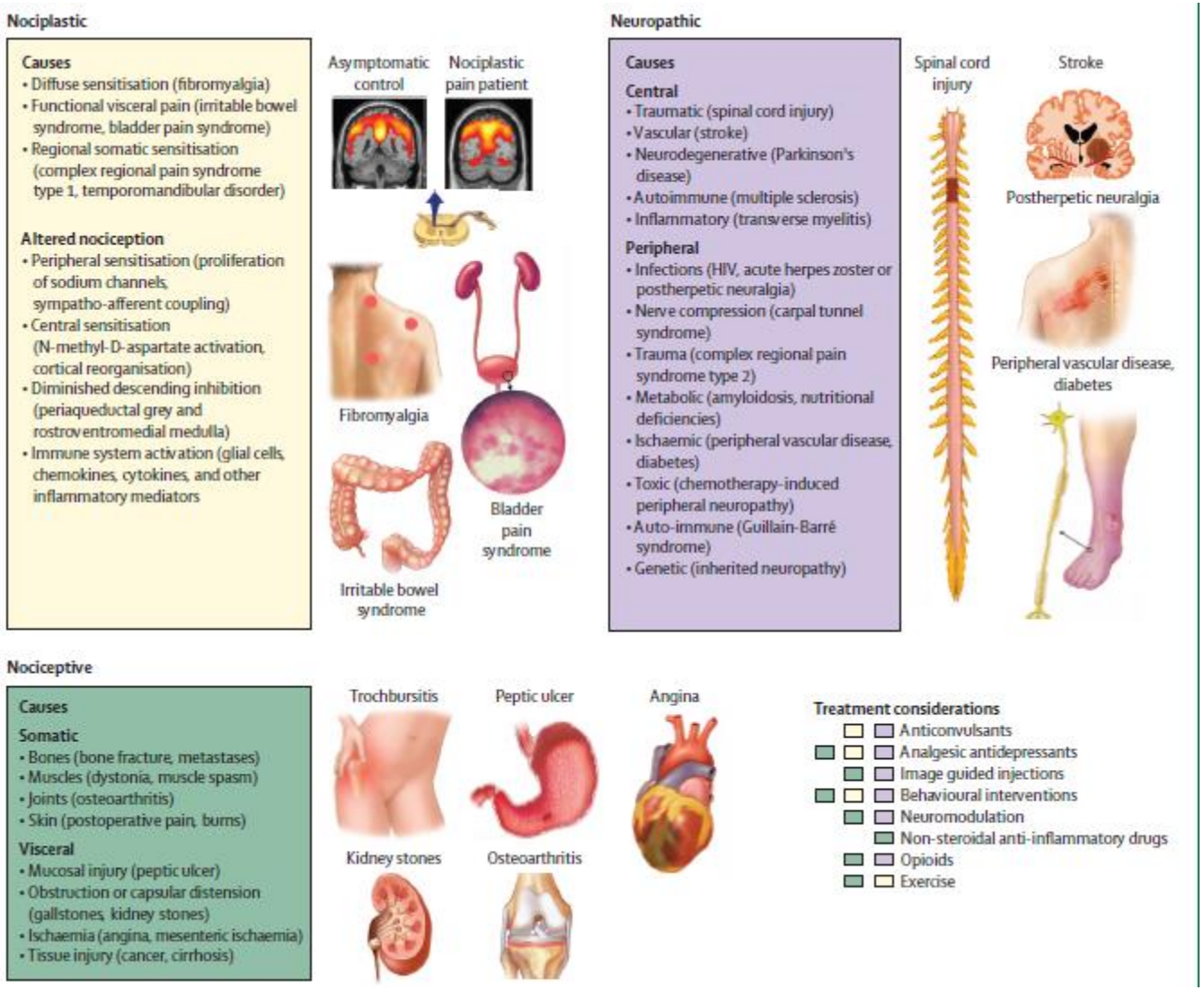
Nicholson BD (2003)
Comerci G (2014)
Murat et al (2018)

Existential
Pain that occurs upon questioning and doubting the value of one's ongoing existence as a living, sentient being

Nociceptive

Neuropathic

Nociplastic



Cohen SP et al. Chronic pain: an update on burden, best practices, and new advances. *Lancet*. 2021;397(10289):2082-2097. doi:10.1016/S0140-6736(21)00393-7

Pain Assessment:
A Rational Approach

Ms. LK

- 32 yo woman with chronic daily headaches, throbbing, usually right periorbital (but can shift)
  - + photophobia
  - + nausea
- Fentanyl OD
- Sumatriptan subcutaneous autojector 15 days/month
- Hydromorph CR 12mg po TID (reports wear-off between doses)
- Borrows oxycocet from friend and buys from street (reports 10-12 tabs per day)
- MEq: 180mg (HM) + ~ 90mg (oxy) = ~ 270mg/day
- Acetaminophen ~ 4000mg/day
- 3 years ago: 2-3 migraines/month
- FH: Migraine, father EtOH, older brother autism
- History of childhood adversity (witnessed trauma, parent SUD)

ADDOP: The Five Pillars of Pain Management

Assess: Symptoms and Risk

Define the problem: What's generating the pain?

Diagnose the pain: What kind(s) of pain is the person experiencing?

Other issues: mental health, substance use, sleep, sex

Personal management, self management – readiness for change

Multidimensional Pain Diagnosis and Treatment Plan

Gordon A. Pain Manag. 2012 Jul;2(4):335-44.

Pillar 1: Assessment

General history

Neurological history

Pain history
- Including function (Brief Pain Inventory)
- Beliefs and expectations (yellow flags)

Social determinants of health

Risk History

PQRSTU	Questions Related to Pain
Provocation/Palliation	What makes your pain worse? What makes your pain feel better?
Quality	What does the pain feel like? Note: You can provide suggestions for pain characteristics such as “aching,” “stabbing,” or “burning.”
Region	Where exactly do you feel the pain? Does it move around or radiate elsewhere? Note: Instruct the patient to point to the pain location.
Severity	How would you rate your pain on a scale of 0 to 10, with “0” being no pain and “10” being the worst pain you’ve ever experienced?
Timing/Treatment	When did the pain start? What were you doing when the pain started? Is the pain constant or does it come and go? If the pain is intermittent, when does it occur? How long does the pain last? Have you taken anything to help relieve the pain?
Understanding	What do you think is causing the pain?

Challenges to ED Assessment of Pain

- Trained to look for the worst first.
- Training not focused on managing chronic pain
- Pain is a frequent reason for ED visit
- Pain can be a barrier to communication
- How to treat something if it isn't effectively identified: no rapid pain evaluation tools for ED; confounding comorbidities, eg anxiety

Pillar 1: Assessment

- PHQ 9
- GAD 7
- PCS
- PSEQ
- ORT (COMM)

1. Do you drink alcohol?
2. Have you ever experimented with drugs?

Cut down
Annoyed
Guilty
Eye-opener

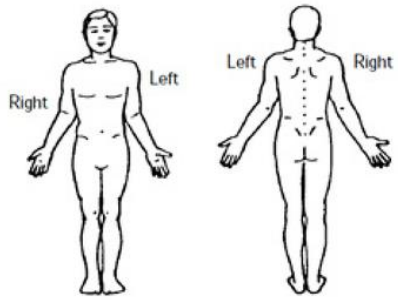
Date: ____ /____ /____ Time: _____

Name: _____ _____ _____
Last First Middle intial

1) Throughout our lives, most of us have had pain from time to time (such as minor headaches, sprains, and toothaches). Have you had pain other than these everyday kinds of pain today?

1. Yes 2. No

2) On the diagram, shade in the areas where you feel pain. Put an X on the area that hurts the most.



3) Please rate your pain by circling the one number that best describes your pain at its **worst** in the past 24 hours.

0 1 2 3 4 5 6 7 8 9 10
No pain — Pain as bad as you can imagine

4) Please rate your pain by circling the one number that best describes your pain at its **least** in the past 24 hours.

0 1 2 3 4 5 6 7 8 9 10
No pain — Pain as bad as you can imagine

5) Please rate your pain by circling the one number that best describes your pain on **average**.

0 1 2 3 4 5 6 7 8 9 10
No pain — Pain as bad as you can imagine

6) Please rate your pain by circling the one number that tells how much pain you have **right now**.

0 1 2 3 4 5 6 7 8 9 10
No pain — Pain as bad as you can imagine

7) What treatments or medications are you receiving for your pain?

_____

_____

8) In the past 24 hours, how much **relief** have pain treatments or medications provided? Please circle the one percentage that most shows how much relief you have received.

0% 10 20 30 40 50 60 70 80 90 100%
No relief — Complete relief

9) Circle the one number that describes how, during the past 24 hours, pain has **interfered** with your:

A. General activity

0 1 2 3 4 5 6 7 8 9 10
Does not interfere — Completely interferes

B. Mood

0 1 2 3 4 5 6 7 8 9 10
Does not interfere — Completely interferes

C. Walking ability

0 1 2 3 4 5 6 7 8 9 10
Does not interfere — Completely interferes

D. Normal work (includes both work outside the home and housework)

0 1 2 3 4 5 6 7 8 9 10
Does not interfere — Completely interferes

E. Relations with other people

0 1 2 3 4 5 6 7 8 9 10
Does not interfere — Completely interferes

F. Sleep

0 1 2 3 4 5 6 7 8 9 10
Does not interfere — Completely interferes

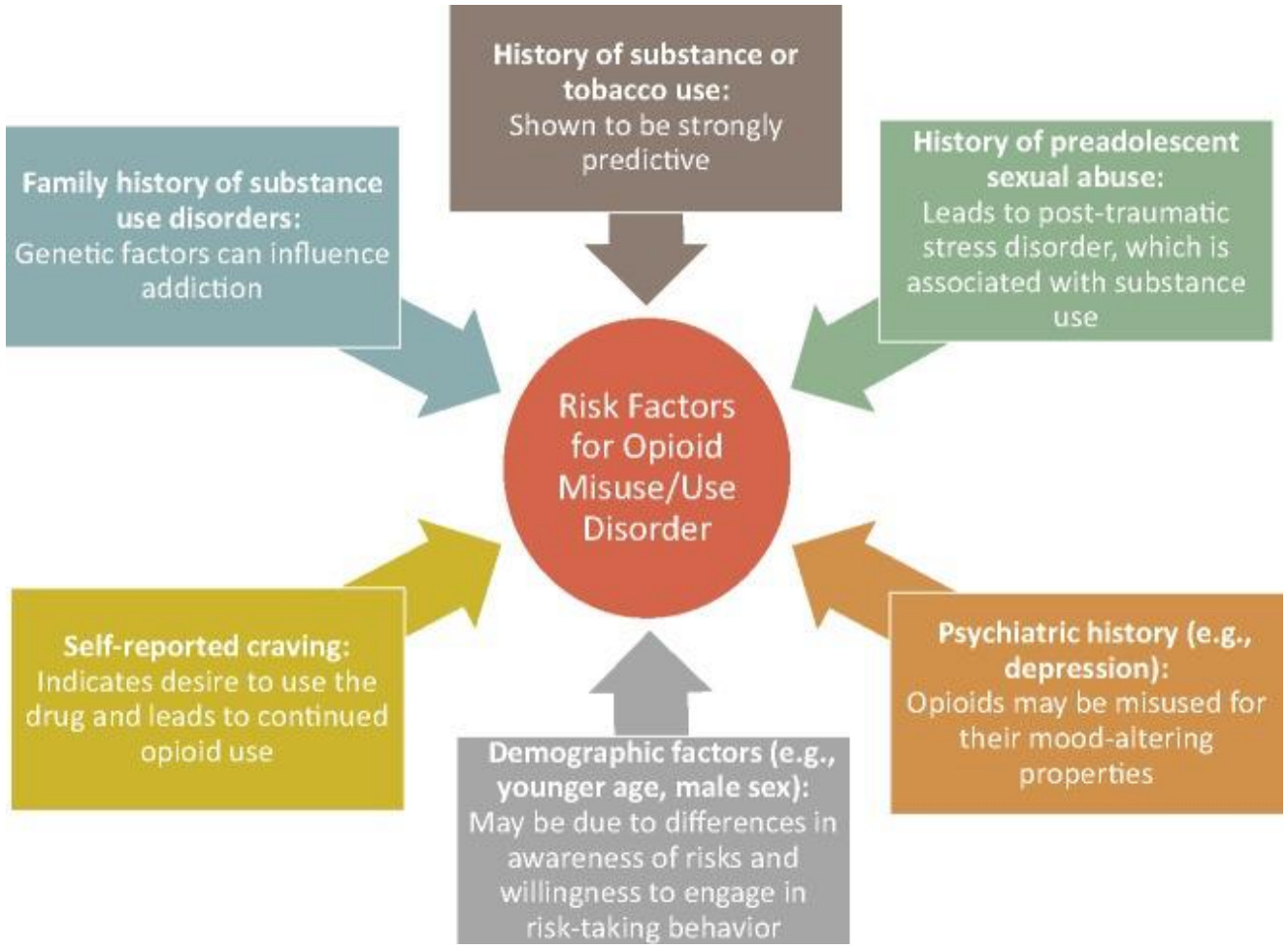
G. Enjoyment of life

0 1 2 3 4 5 6 7 8 9 10
Does not interfere — Completely interferes

Pillar 1

Risk Assessment

Identify the individuals with the greatest risk of aberrant behaviour NOT to stigmatize, but to improve care



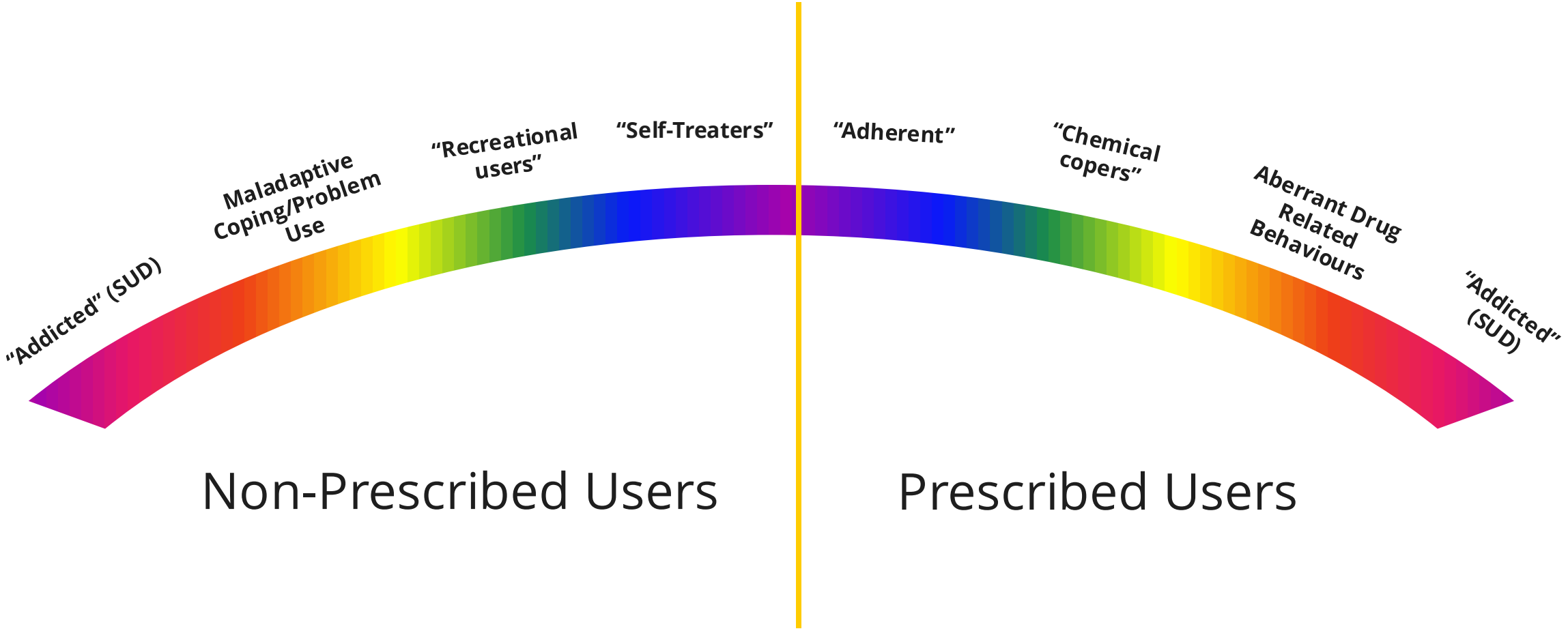
Predictors of Opioid Aberrancy in Patients with Chronic Pain: A Diverse Set of Risk Factors

- Younger, male patients (cross sectional studies)
- Higher pain interference → higher doses of opioids→ higher risk (prospective)
- Concurrent physical illnesses, substance use, degree of pain-related limitation
- Concurrent anxiety and depression (cross-sectional, prospective studies); PTSD
- Childhood adversity
- High levels of pain catastrophizing
- SU Hx: prior SUD, recent use of illicit drugs, prior legal problems related to drug or alcohol use, prior treatment for SUD

- Reduced sleep (every extra 1 hour in avg hours of sleep reduced odds of aberrant opioid use by 20%)

Hah JM et al. J Pain Res. 2017 May 3;10:979-987. doi: 10.2147/JPR.S131979. eCollection 2017.

Spectrum of Opioid/Medication Use

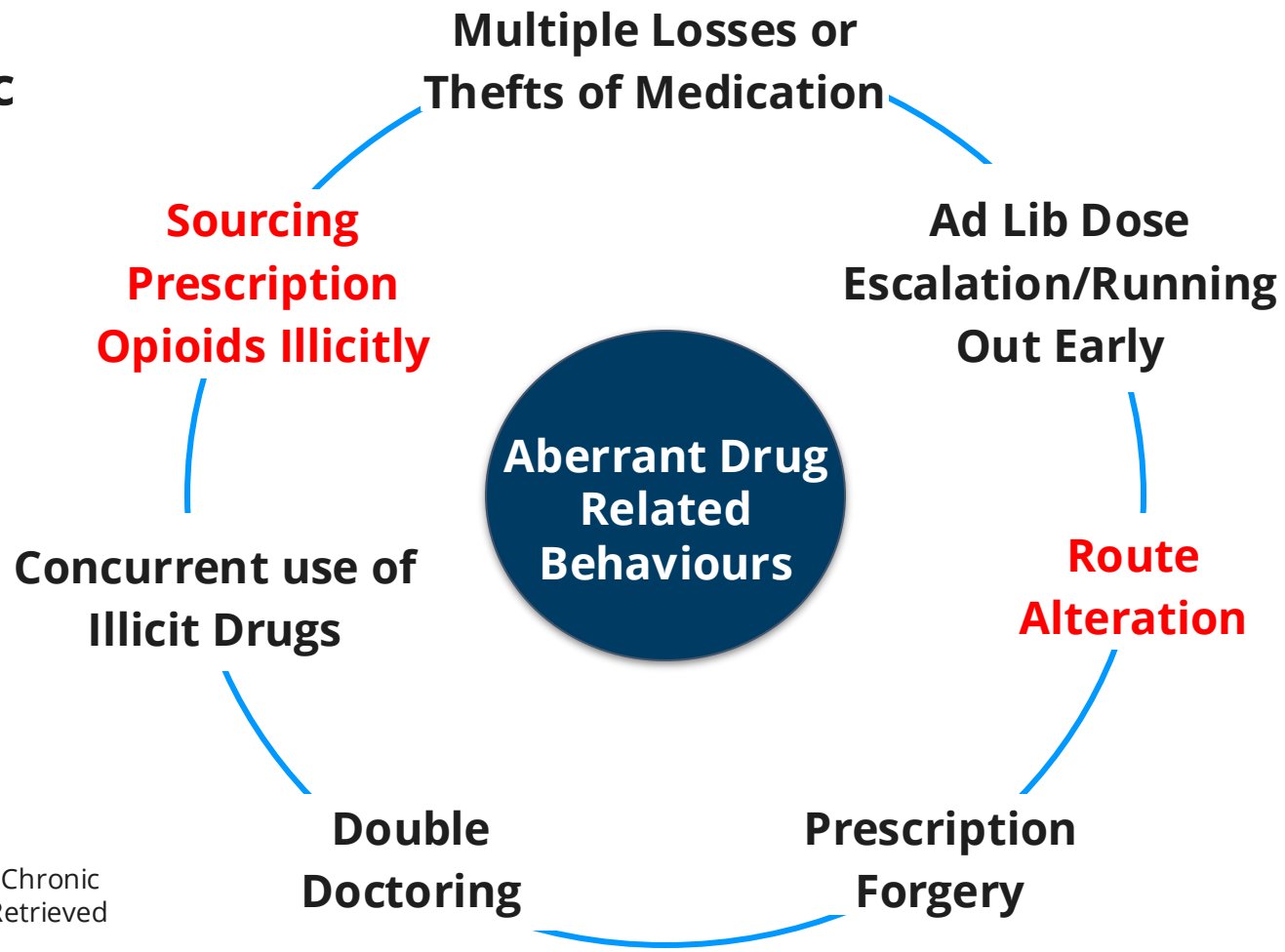


Aberrant Drug Related Behaviours

Any medication-related behaviours that depart from the agreed-upon therapeutic plan of care

- Problematic behaviors or “red flags” for clinicians
- **Monitoring for ADRB essential part of opioid therapy**

- Should be viewed as “data,” which must be interpreted in a differential diagnosis of addiction



Dowell D, Haegerich TM, Chou R. CDC Guideline for Prescribing Opioids for Chronic Pain — United States, 2016. MMWR Recomm Rep 2016;65(No. RR-1):1–49. Retrieved November 2021, from: http://dx.doi.org/10.15585/mmwr.rr6501e1

Does My Patient Have a Use Disorder? 5 Cs Definition of Addiction

ASAM-APS-AAPM BEHAVIORAL CRITERIA	EXAMPLES OF SPECIFIC BEHAVIORS IN OPIOID THERAPY OF PAIN
Impaired control over use **Compulsive use**	Frequent loss/theft reported Calls for early renewals Withdrawal noted at appointments
Continued use despite harm due to use	Declining function Intoxication Persistent over-sedation
Preoccupation with use, craving	Nonopioid interventions ignored Recurrent requests for opioid increase Complaints of increasing pain in absence of disease progression despite titration

Ms. LK

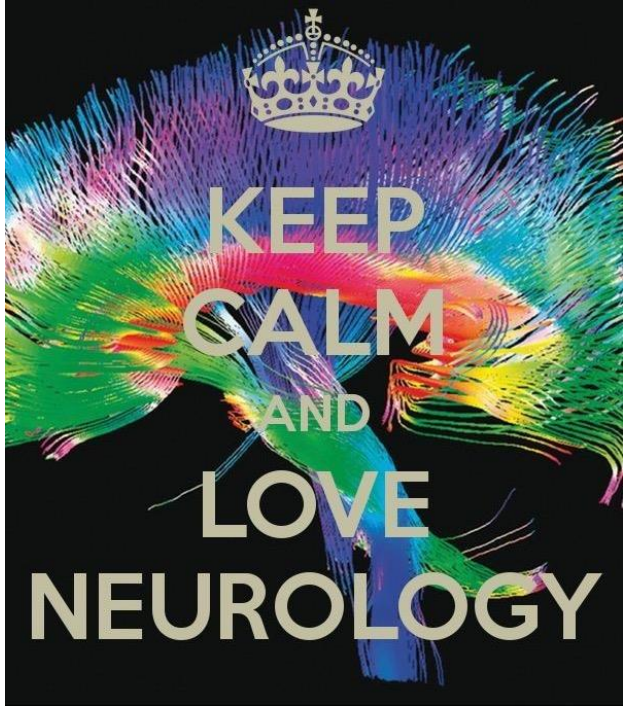
32 yo woman with chronic daily headaches → throbbing, usually behind R eye

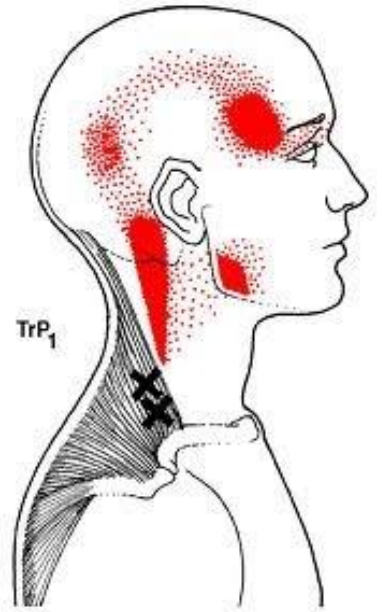
- + photophobia
- + nausea

- Lost job during COVID pandemic
- Lost relationship
- Isolated
- Struggling financially
- Food insecurity
- Reports feeling depressed (PHQ-9 = 15); denies suicidal ideation
- Occasionally has a bottle of wine to deal with pain, stress (2-3 days per week)

Pillar 2: Define the Underlying Problem

- What's generating the pain?
- Differential diagnosis based on history and focused physical examination
- Rational selection of investigations to narrow or confirm diagnosis
- Defining the problem may offer you the possibility of providing disease specific treatments that may result in pain reduction or even elimination, and result in a reduced need for pain medication.

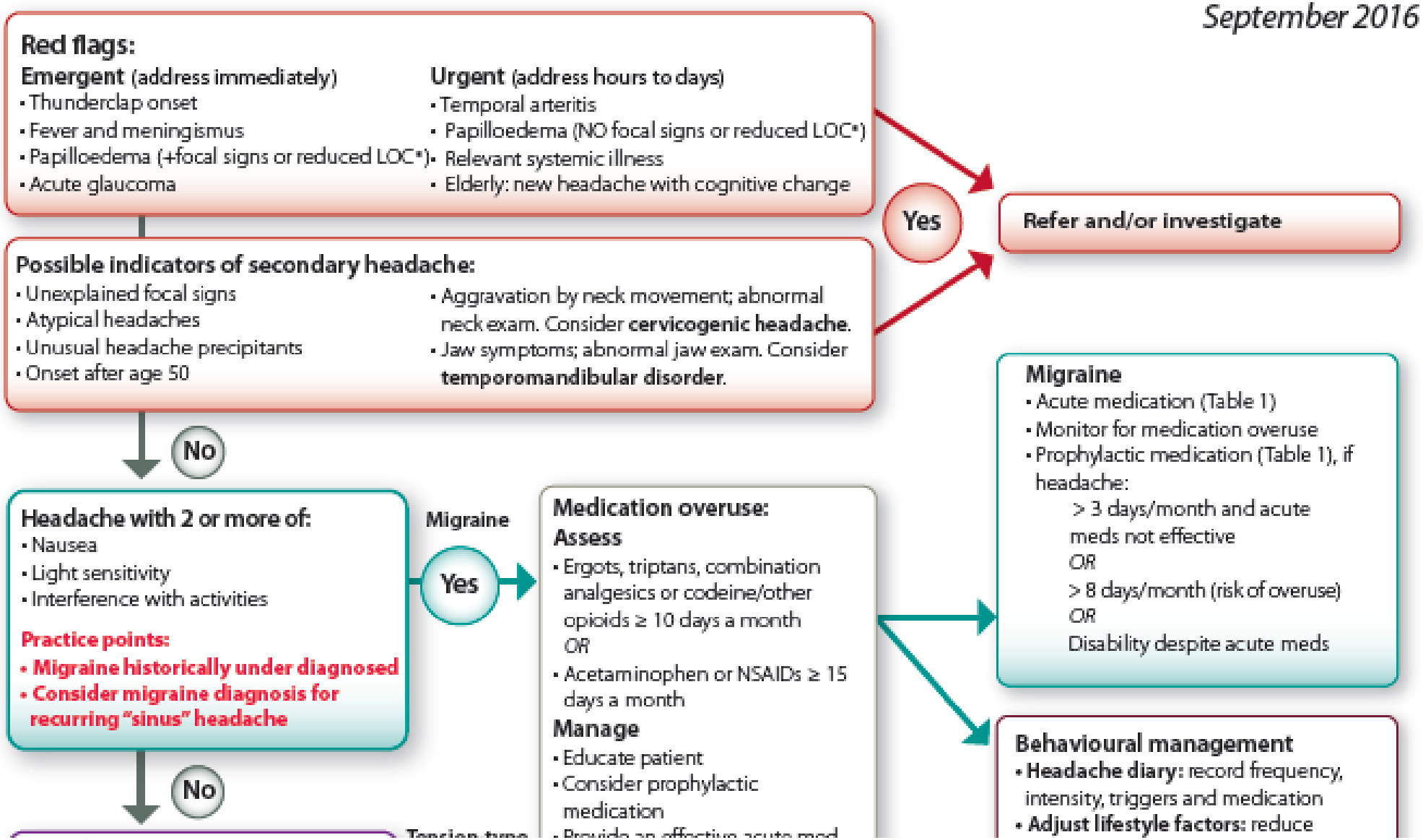




Toward Optimized Practice

Quick Reference: GUIDELINE FOR PRIMARY CARE MANAGEMENT OF HEADACHE IN ADULTS

September 2016



Clinical Diagnosis – Canadian HA Guidelines

Migraine without aura (migraine with aura if an aura is present) if they have at least two of:

1. Photophobia (*Does light bother you when you have a headache?)*
2. Impairment (*Do you feel impaired or avoid activities when you have a headache?)*
3. Nausea (*Do you have nausea when you have a headache?)*

2/3 symptoms = 93% PPV

3/3 symptoms = 98% PPV

PIN the diagnosis

Cephalalgia 2018.

Lipton RB et al. Neurology 2003.

Clinical Diagnosis

Chronic migraine if headaches meet migraine diagnostic criteria or are quickly aborted by migraine specific medications (triptans or ergots) on 8 days a month or more

- **Chronic migraine with medication overuse** if the patient uses:
  - Ergots, triptans, opioids, or combination analgesics on ***10 days a month or more***, or
  - Acetaminophen or NSAIDs on ***15 days a month or more***.

Patients with headache on 15 or more days per month for more than 3 months and with a normal neurological examination

Headache Diagnosis – Physical Examination

Patients presenting to a healthcare provider for **the first time** with headache, or **with a headache that differs from their usual headache**, should have a physical examination that includes the following:

1) A screening neurological examination
2) A neck examination
3) A blood pressure measurement
4) A focused neurological examination, if indicated; and
5) An examination for temporomandibular disorders, if indicated

Pillar 5: Pain as a Motivational Disorder – How It Impacts Lives

Pain inherently impacts motivation.

Robs assertiveness

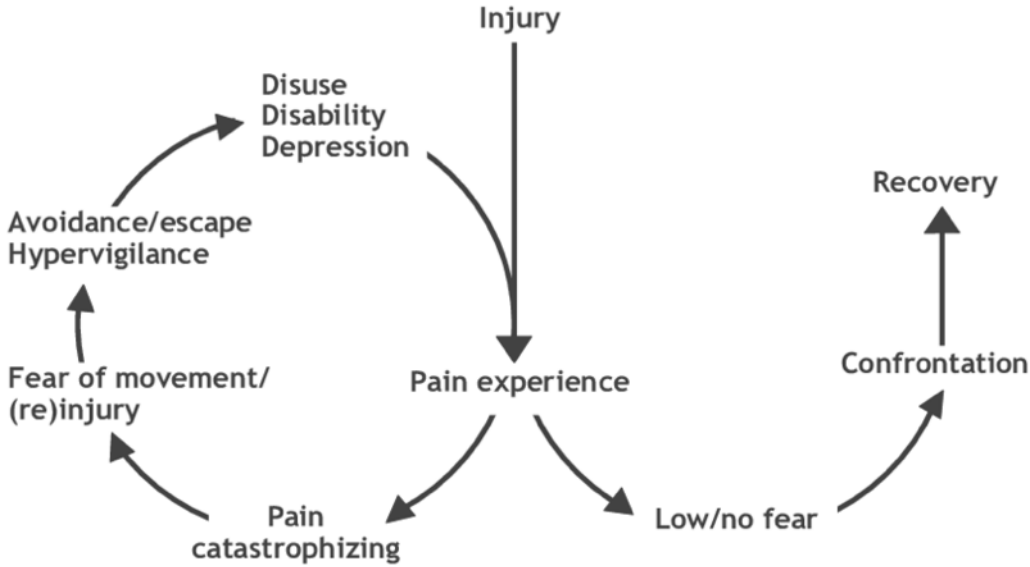
Nociceptive pain → non-negotiable "stop signal" in which our nervous system alerts us to harm or injury to our body, and activates an autonomic and emotional response accordingly.

Neuroplastic changes → Salience Network, etc

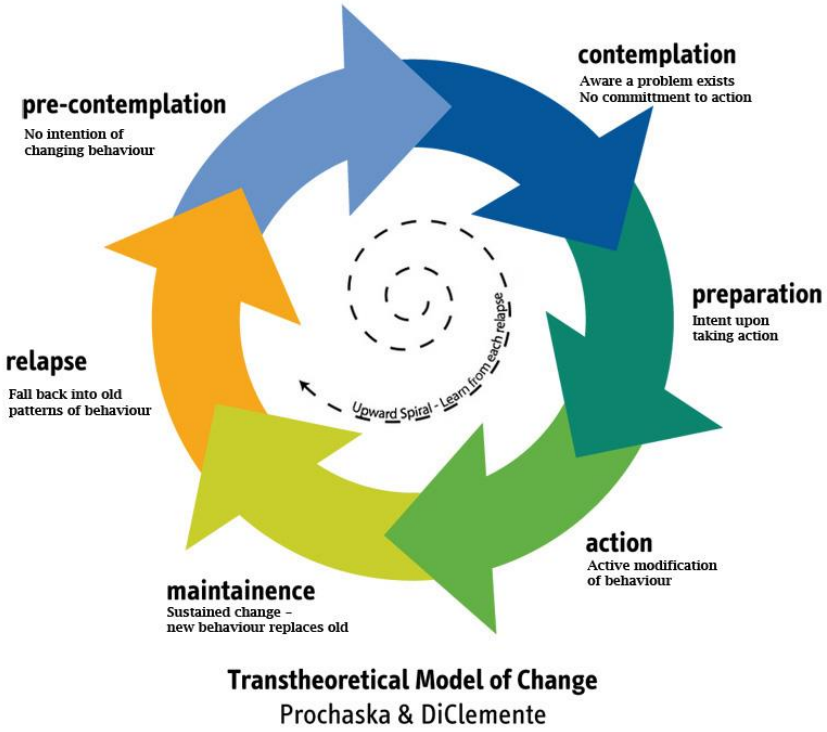
Depending on one's psychological framework and the presence of yellow flags, patients may be afraid of movement and reinjury.

Often the impact of pain is associated with an increased risk of mental illness.

Patients will often speak about how overwhelming and isolating this experience can be.



Stages of Change – Where's the Patient?



Transtheoretical Model of Change
Prochaska & DiClemente

- Meet clients where they are
- Continuum of ambivalence
- Explore readiness to change, importance and confidence
- **Who's working harder?**
- Lack of buy-in and self management → 'refractory' patient
- Educate: Diagnosis, Pain Neuroscience Education
- Empower: Provide client and family with resources, eg. Pain self-management
- Expectations: Manage proactively
- Therapeutic alliance is key

An Idealized ED Approach

- Set expectations-let pts know you will do your best to help them feel comfortable but they may not reach a 0/10 pain scale
- Use a pain scale-Numbers, FACES, visual analogue or verbal rating. Pick one and use it as a guide to let you know how you are doing.
- Use Nonopioids first when possible- iv acetaminophen, iv ketorolac, nerve blocks, trigger point injections. Consider pain-dose ketamine for pt with OUD.
- Opioids-use 2022 CDC guidelines to assist with prescribing.
  - Immediate release opioids, least effective dose
  - Prescribe no greater quantity than needed for expected duration of pain severe enough to require opioids
- When appropriate, refer for follow up to appropriate consultant service (Gen Surg, Ortho, Neuro, etc..)

Treating Pain in People With Addictions and Mental Health Comorbidities

Ms. LK

32 yo woman with chronic daily headaches → throbbing, usually behind R eye

- + photophobia
- + nausea

- Opioid OD
- Lost job during COVID pandemic
- Lost relationship
- Isolated
- Struggling financially
- Food insecurity
- Reports feeling depressed (PHQ-9 = 15); denies suicidal ideation
- Occasionally has a bottle of wine to deal with pain, stress (every 1-2 weeks)
- UDS: fentanyl, metabolites, bromazolam, hydromorphone, oxycodone, ethylglucuronide

- Chronic migraine headache without aura
- Medication overuse (triptan, opioid, acet)
- Opioid tolerance and withdrawal-mediated pain
- Opioid use disorder - moderate
- Mood disorder
- Binge drinking
- High “risk” : ADRBs, mood d/o, family history, ACEs

Treatment Plan: 3 Ps of Pain

Based on the diagnoses, an evidence-based treatment plan is formulated working towards ***improved pain, function, QoL***

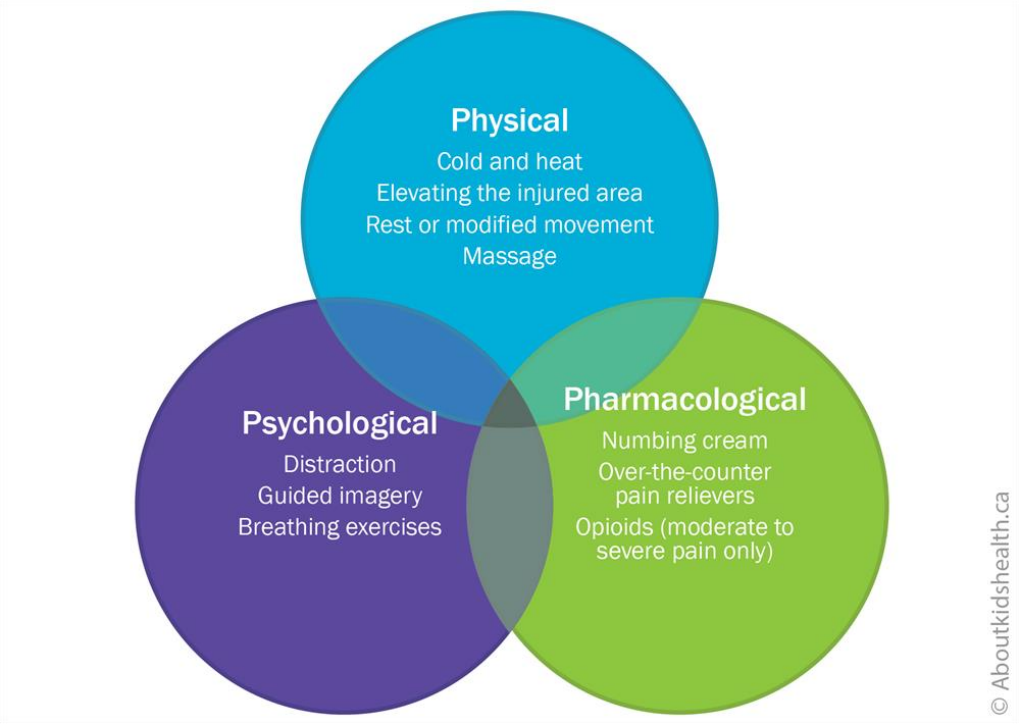
Together develop reasonable goals and expectations

- Chronic pain is not curable but can be managed (30% reduction in pain intensity is a good outcome)
- Function and quality of life can be improved significantly
- Provide education about pain condition and self-management strategies

Shared decision-making is key

3Ps: Physical, Psychological, Pharmacological

...and Structure (frequency of visits, dispensing, etc)



Ms. LK

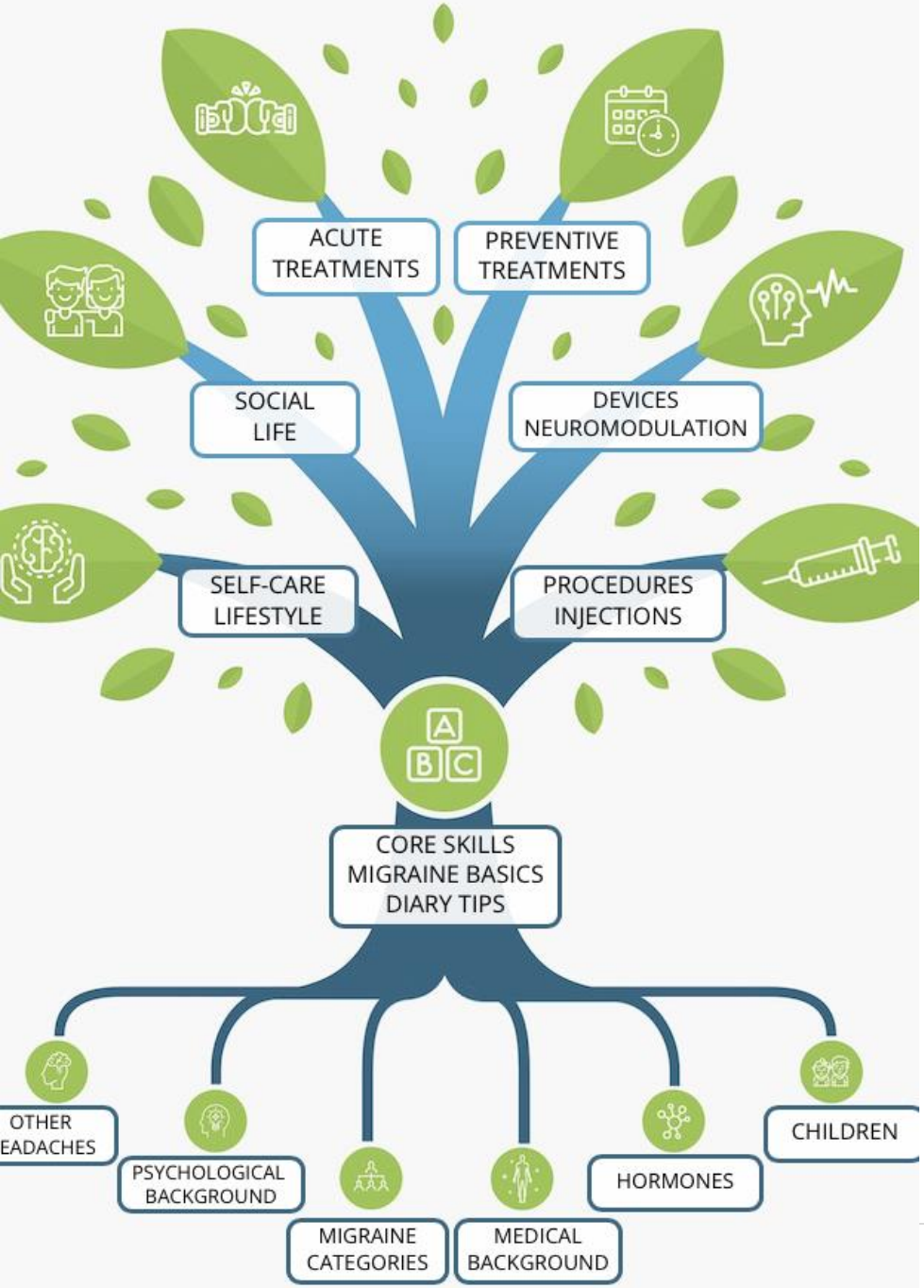
32 yo woman with chronic migraine headache without aura

- Medication overuse (triptan, opioid, acetaminophen)
- Opioid tolerance and withdrawal-mediated pain
- Opioid use disorder - moderate
- Mood disorder
- High "risk" : ADRBs, mood d/o, family history, ACEs

PLAN

- Diagnosis/Education
  - Regular sleep, meals, hydration
  - Headache diary (tracking and self-management tool)

- Discussion around opioid switch. Client open to switching to buprenorphine
- Micro-induction started in ED
- Close follow-up weekly
- Urine toxicology testing at most visits (on track)
- Relaxation exercises – mindful movement (tai chi)
- Enrolled in CBT



Migraine Self-Management Strategies

1.Headache Diary: Frequency, intensity, triggers, medications

- Promotes self-efficacy

  Open-label prospective study, N: 284 patients with migraine

  Were educated by clinician and then given education and self-management tools

  Assessed at 0, 3, 6, 9 and 12 months
- 46% reported >50% reduction in h/a frequency
- Also significant improvements in function and quality of life
- Significant improvements in cognitive and affect/anticipatory anxiety (interictal) aspects of h/a management

Smith TR et al. Headache 2010.

Migraine Canada
https://migrainecanada.org/the-migraine-tree/

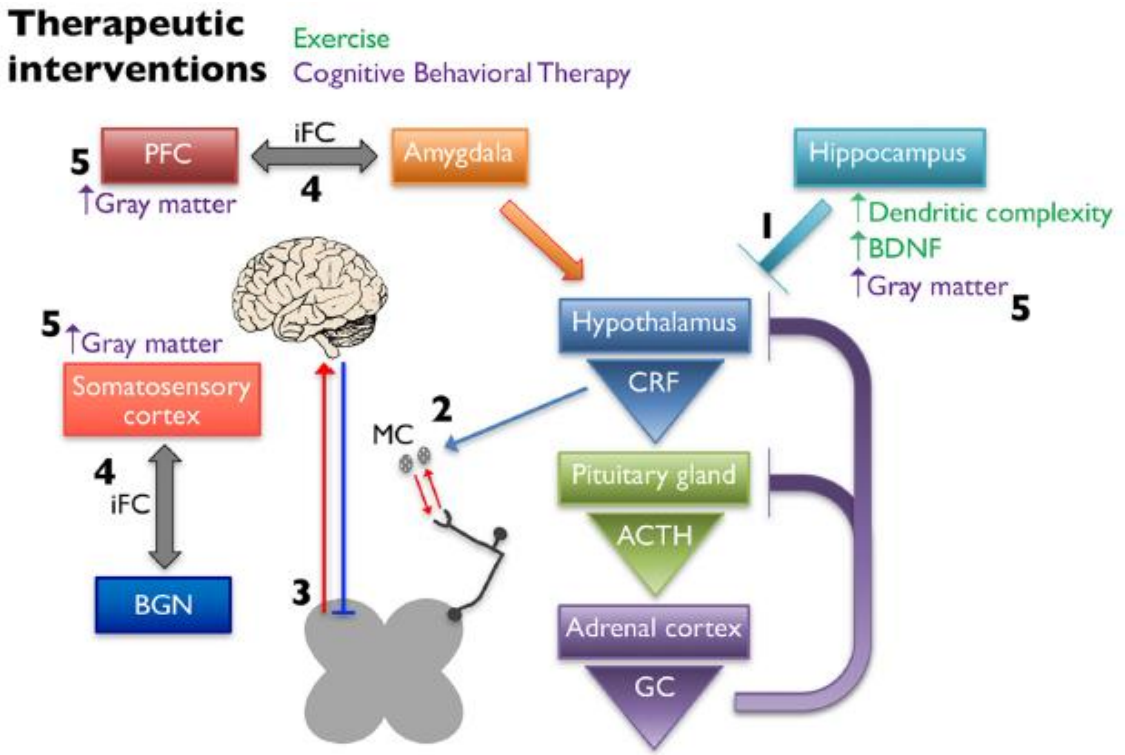
Non-Pharmacological Approaches

- Physical
  - Activity, exercise, stretching, aquatherapy, mindful movement (yoga, tai chi, qi gong) has the most evidence for chronic pain
  - Heat, TENS, massage, PT and U/S all act on the gating of pain transmission, decreased spasm, increased collagen, decreased ischemia/increased O2, increased nerve conduction, produce endorphins which reduce mental stress (and cold decreases swelling & slows nerve conduction)
  - Sleep is key
- Psychological/Behavioural
  - Pain education, self-management techniques, distraction, CBT-p, MBSR, ACT
  - Help patients understand pain, build self-efficacy, promote active recovery, enhance coping skills
  - Pain Reprocessing Therapy (The Way Out –by Allan Gordon)
  - Relationships with providers matter and impact outcomes

https://cep.health/media/uploaded/CEP_CNCP__Appendix_Updated2018.pdf

Reversing Brain Changes: Retraining Your Brain!

- CBT increases prefrontal cortex (PFC) gray matter
- Education
- Yoga
- Exercise
- Other therapies



Eller-Smith OC, Nicol AL and Christianson JA (2018) Potential Mechanisms Underlying Centralized Pain and Emerging Therapeutic Interventions. Front. Cell. Neurosci. 12:35. doi: 10.3389/fncel.2018.00035

Non-Opioid Pharmacologic Strategies

- Acetaminophen
- NSAIDs (reduce post—op pain if taken prior to minor surgery; reduce post-op prn opioid requirement)
  - Ibuprofen 400mg q4-6 hr
  - Diclofenac/misoprostol 50mg TID
  - Celecoxib – shown to have greater analgesic effect and tolerability than many opioids
- Gabapentin, Pregabalin (NeP, NociP, EtOH, anxiety)
- Clonidine 0.1-0.2mg BID prn (analgesic, anxiolytic, opioid w/d)
- TCAs (neuropathic pain, NociP, migraine prophylaxis, TTH prophylaxis, MyoP)

https://cep.health/media/uploaded/CEP_CNCP__Appendix_Updated2018.pdf

Non-Opioid Pharmacologic Strategies

- SNRIs (dulox: NeP, Noci P, low back pain, joint pain; venlafax: migraine, PTSD)
- Cannabinoids
- 4th Line: Topiramate (Migraine, EtOH), VPA, lamotrigine, CBZ, oxcarbazepine
- Topicals
- Muscle relaxants (eg. Cyclobenzaprine prn with active therapies; NOT baclofen)
- Low-dose naltrexone (1 – 4.5mg) for nociplastic pain
- Ketamine infusion– NMDA antagonist (in-hospital settings); infusion therapy for refractory NeP
- Mg po (migraine, muscle relaxant); iv (NMDA antagonist)

https://cep.health/media/uploaded/CEP_CNCP__Appendix_Updated2018.pdf

Opioids

- RCTs show opioids effective for nociceptive & neuropathic pain***
  - Mean pain ratings decrease by ~ 30%
  - Some trials found improvement in pain-related disability
- However, higher doses cause hyperalgesia, allodynia and withdrawal mediated pain so lowering doses actually can improve pain
- Aim for max of 50-90mg in chronic pain
- Long-acting formulations are safer and should make up most of the daily dosing

Interventional Strategies

	Acute	Chronic
Image-guided Epidural	✓	✓ - Leg-dominant back pain
Image guided facet (medial branch) block	X	✓
Peripheral nerve block/regional block	✓	✓
Neuromodulation	X	✓
Trigger Point Injections (MyoP)	X	✓
Acupuncture	✓	✓
Joint injections (corticosteroid)	✓	✓

Risk Response: Adjusting Structure

No early refills

Opioids indicated?

Written treatment agreement

More frequent visits

More frequent UDS

More frequent dispensing / observed dosing / pill counts

Prescription of long-acting drug only

Referral to Addiction Medicine Specialist or other colleague to clarify diagnosis

NB: Treat co-morbidities

Optimizing non-pharm modalities

Ongoing coordination with sponsor or program, if addiction therapy is ongoing

Treatment Agreement: Enforcement vs. Engagement

NOT clinician-centered, reactive approach,

++ individualized, patient-centered approach.

- Shared decision-making where both parties mutually agree on treatment goals
- Plan explicitly for contingencies - eg. treatment failures, side effects, and other signs of harm including medication aberrancy
- Carefully document the patient's informed consent to that plan.

Structured Treatment: Remember the Spectrum

Structured opioid therapy puts safeguards and controls in place proactively to reduce harms and improve outcomes of opioid therapy.

- Based on assessment, categorize patient into low or high perceived risk

- Structure the therapy to match the perceived risk
  - Improves the ability to monitor
  - May help the vulnerable patient maintain control

- Stigma can be reduced
- Overall risk contained
- Patient care improved

Managing Pain in Patients with OUD or at Risk

- ✓ Buprenorphine
- ✓ Methadone
- ✓ Sustained release oral morphine
- ✓ Acute-on-chronic short-acting opioids
  - ✓ Structured (dispensing, visits, UDTs) – ~ same frequency as OAT
  - ✓ Don't use molecule of choice
  - ✓ **NEED HIGHER DOSES OF SHORT-ACTING OPIOIDS**
  - ✓ Clinical Pearl: Use short-acting opioids with higher Mu-receptor affinity to "treat through" buprenorphine (eg hydromorphone, fentanyl (peri-operative))
- ✓ Non-opioid adjuvants
- ✓ Interventional modalities
- ✓ Non-pharm modalities

NB: MULTIMODAL PAIN MANAGEMENT

Buprenorphine Formulations

Sublingual Film (Suboxone); Tablets (Zubsolv) (indication: OUD; must be taken sublingually; not effective when swallowed due to first-pass effect):

- Buprenorphine/naloxone 2/0.5 mg SL and 8/2 mg SL
- Buprenorphine/naloxone 12/3 mg SL and 16/4 mg SL

Buccal Film (Belbuca; indication pain): 75, 150, 300, 450, 600, 750, and 900µg

IV/IM Injectable (Buprenex; indication pain)

Transdermal Patch (indication: chronic pain)

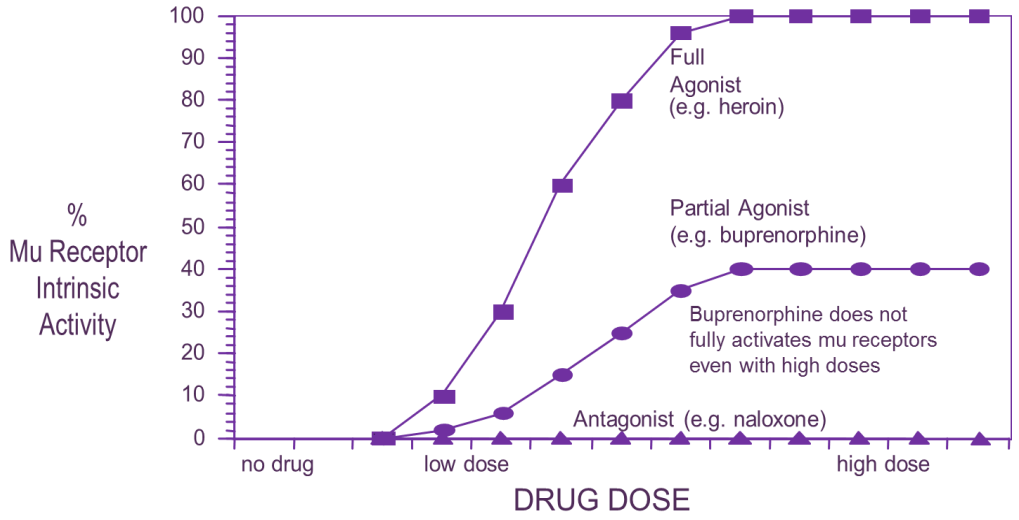
- 5, 10, 15, 20 ug/hr (q7 days)

Extended-release monthly injection (indication: OUD)

- Buprenorphine 100 mg/0.5 mL and 300 mg/1.5 mL injectable solution

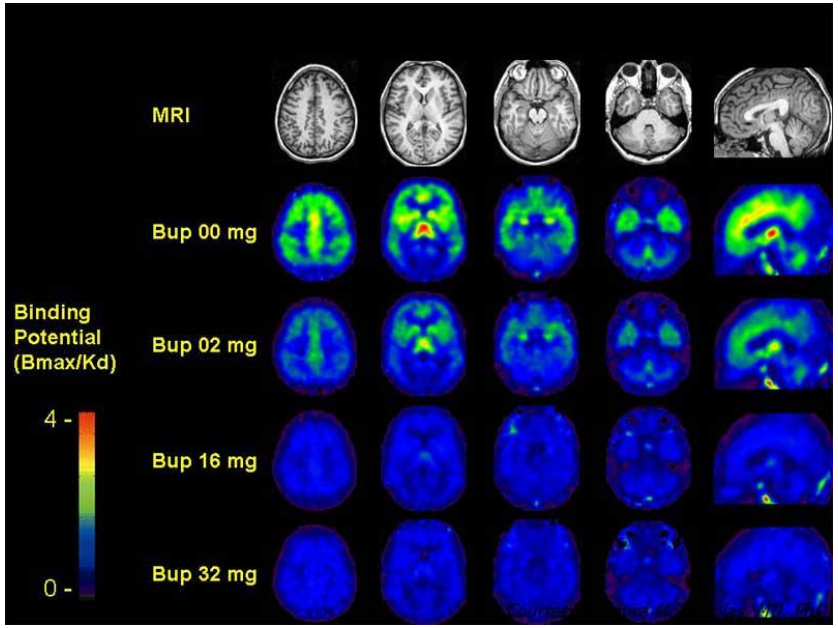
Buprenorphine – Partial Agonist

- Partial agonist at the mu-opioid receptor
- Rapid absorption by sublingual mucosa
- Slow release into bloodstream
- Peak plasma concentration in 1 – 4 hours
- Very low oral bioavailability due to first pass effect (10%)
- Sublingual bioavailability ~ 50%
- Can be abused intravenously (reason for naloxone) or intra-nasally
- Transmucosal route elimination half-life: 20-60hrs (avg ~ 35 hrs)



Partial Agonist ?

- Bup acts at multiple receptors → total analgesic effect results from activity at several receptors
- Bup displays > 98% nociceptive efficacy in animal models
- PET scans of human brains show that full analgesia achieved with bup doses that occupy < 100% of opioid receptors



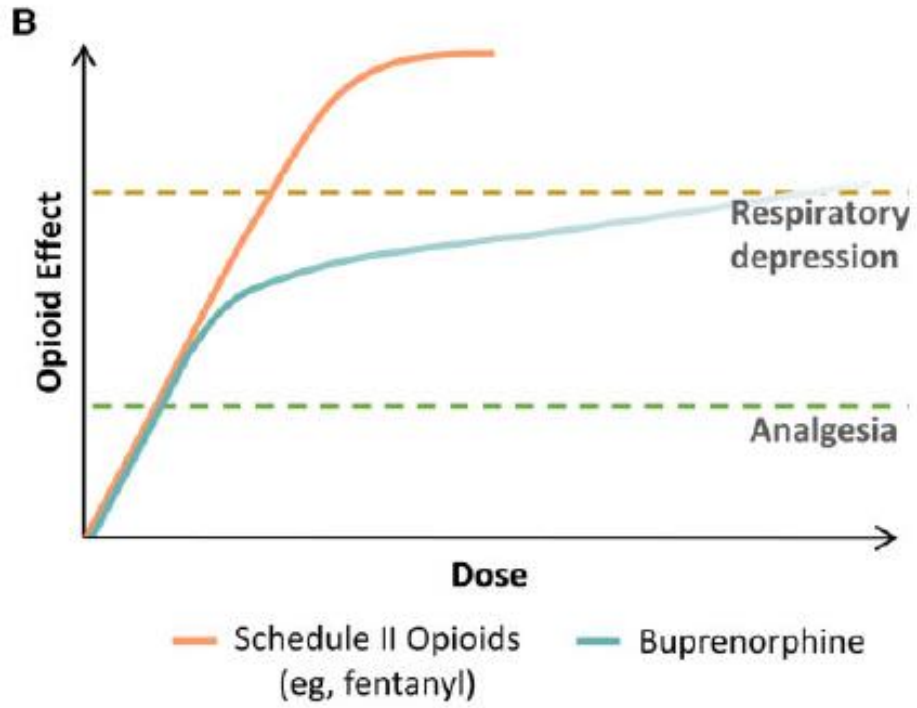
Raffa et al. J. Clin Pharm and Therapeutics. 2014

Potential Advantages of Buprenorphine in Chronic Pain

- ✓ Efficacy demonstrated in various pain conditions, comparable to "full agonists"
- ✓ Ceiling effect for respiratory depression
- ✓ Less development of tolerance via KAPPA antagonism, ORL-1 agonism
- ✓ Antihyperalgesic effect (Na channel action)
- ✓ Less effect on hypogonadism (opioid agonist therapy experience)
- ✓ Less immunosuppression compared with morphine and fentanyl (limited evidence – preclinical and clinical)
- ✓ Ease of use un elderly and in renal impairment
- ✓ Kappa antagonism: Reduced depression and SI

NB: Analgesic Window 6-8 hrs (split dosing if sufficiently stable)

BUT: INCREASING BUP DOSE IS UNLIKELY TO ADDRESS ACUTE PAIN



Webster L et al. Understanding buprenorphine for use in chronic pain. Pain Medicine, 21(4), 2020, 714–723

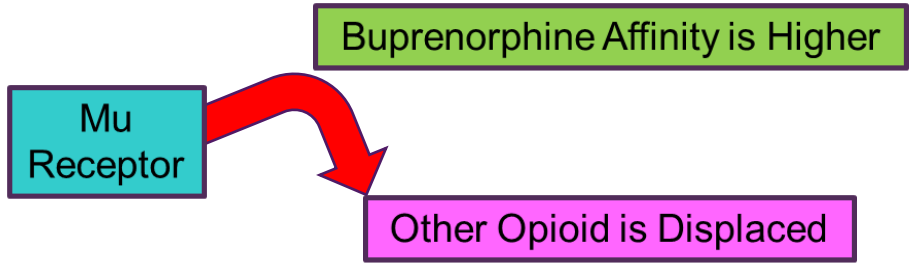
Indications for Buprenorphine

- Elderly
- Respiratory conditions
- Chronic kidney disease
- Concurrent use of alcohol, sedating drugs or medications
- High MEq, Tolerance, Withdrawal-Mediated Pain, “Stuck / Failed Opioid Taper”
- High-risk clients including those with use disorders

Buprenorphine: High Affinity & Slow Dissociation

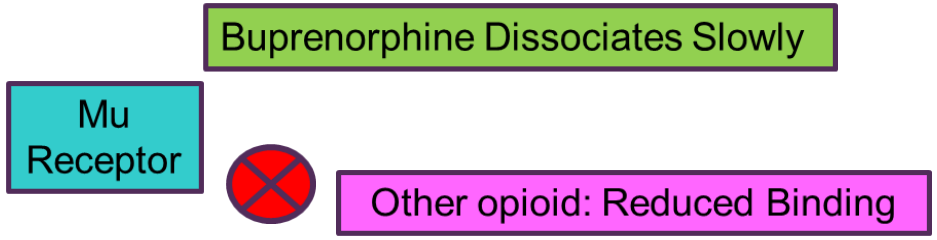
AFFINITY: The strength with which a drug physically binds to a receptor

- Buprenorphine has strong affinity; will displace full mu receptor agonists like heroin and methadone
- It is not displaced by other opioids*
- Receptor binding strength (strong or weak), is NOT the same as receptor activation



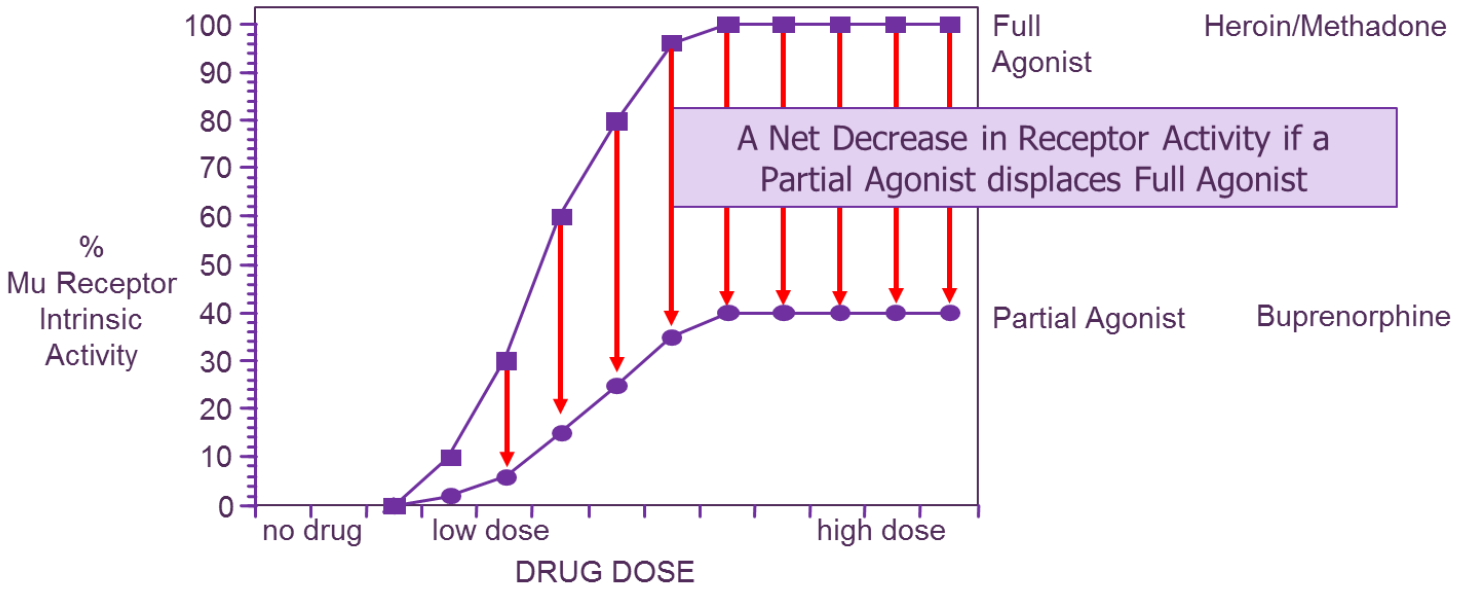
DISSOCIATION: The speed of uncoupling from the receptor

- Buprenorphine dissociates slowly
- Occupies the receptor a long time and blocks newly introduced opioids (heroin, methadone, etc) from binding to those receptors



Concept of Partial Agonist & Precipitated Withdrawal

- If mu-receptors are already occupied by a “full agonist”, buprenorphine will quickly displace full agonists
- Will put patient in state of relative withdrawal → “Precipitated Withdrawal”
- Very intense, sudden onset, and unpleasant for patients



Buprenorphine Induction Options

1. **Traditional Start (usually started in office or ED)**
2. Home Start
3. **Microdosing**
   a) Does not require patient to be in withdrawal
   b) Good for patients who can't tolerate withdrawal symptoms, shouldn't undergo withdrawal for medical reasons (eg. Pregnancy, unstable vascular disease, unstable mental health condition)
   c) Does not result in precipitated withdrawal – gradually accumulates at the mu receptor
   d) Once the dose is at 4mg, it can be increased rapidly and other opioids tapered rapidly or stopped abruptly
4. Macrodosing

Patel P, Dunham K, Lee K. Buprenorphine/Naloxone Microdosing: The Bernese Method – A Brief Summary for Primary Care Clinicians. Toronto, ON: META:PHI; 2019.

Randhawa PA, Brar R, Nolan S. Buprenorphine-naloxone "microdosing": an alternative induction approach for the treatment of opioid use disorder in the wake of North America's increasingly potent illicit drug market. CMAJ. 2020;192(3):E73.

Buprenorphine/Naloxone – Traditional Start

Ensure COWS ≥ 13 and appropriate time from last opioid use:

• 12–16 hours for short-acting prescription opioids (e.g., IR oxycodone, hydromorphone, morphine)

• 18–24 hours for intermediate-acting prescription opioids (e.g., CR oxycodone, hydromorphone)

• 48+ hours for fentanyl or any opioids from the unregulated supply

• **We do not recommend starting buprenorphine through the ED for for people who take methadone.**

Give first dose:

• Buprenorphine 4 mg (2x2 mg tablets SL); 2 mg if the patient is elderly, on benzodiazepines, or at other risk of sedation.

• Instruct the patient to keep the tablet under their tongue until it fully dissolves and to avoid eating, drinking, or talking during this time.

Reassess in one hour:

• If withdrawal symptoms are **improving but not resolved**, repeat the same dose (2–4 mg) and discharge the patient with tablets or a prescription to complete their Day 1 dosing (usual Day 1 maximum 16 mg, 8 mg for elderly).

• If withdrawal symptoms are **markedly worse**, the patient may be experiencing precipitated withdrawal. Precipitated withdrawal can be treated with additional buprenorphine doses (see below).

Write a prescription for 16 mg:

• Prescription should last until planned follow-up.

• Doses are typically dispensed daily at a pharmacy of choice until follow-up.

• Higher initial doses and longer prescriptions are associated with more effective control of withdrawal symptoms and cravings and with better treatment follow-up.

• Caution should be used with patients with heavy alcohol or benzodiazepine use, and with medically complex or older patients.

Buprenorphine /Naloxone Induction Protocols

	HOME START	MICRODOSING	MACRODOSING
Indications	• Can abstain from opioid use for an appropriate period of time. • Can follow instruction sheet. • Support at home. • No concurrent alcohol or benzodiazepine use.	• Taking methadone or unregulated fentanyl (very long half-life of these medications makes home start difficult). • Cannot tolerate withdrawal symptoms. • Continued opioid use. • Should not undergo withdrawal for medical reasons (e.g., pregnancy, coronary artery disease).	• Unregulated fentanyl use. • Currently in withdrawal but does not meet criteria for traditional start and at least 18 hours since last use, OR in withdrawal from full naloxone reversal of an opioid overdose. • Treatment delay poses significant risk of adverse outcomes.
Advantages	• Achieves therapeutic dose more rapidly than microdosing.	• Almost certainly avoids precipitating withdrawal. • Can be taken while opioid use continues.	• Achieves therapeutic dose in one visit. • Starting treatment in the ED is associated with higher rates of treatment retention than delay/referral.
Disadvantages	• Risk of precipitated withdrawal if instructions are not followed and buprenorphine is taken too early.	• Longer time to achieve therapeutic dose. • Instructions can be confusing (better with blister packing).	• Off-label practice. • Withdrawal symptoms may get worse before resolving.

Steps	• Review **Home Start Patient Information sheet**.
	• Remind patients that buprenorphine must be taken SL.
	• Offer Rx withdrawal medications.
	• Write **Rx** until planned follow-up **(max 3 days)**:
	  ◦ Day 1 max 16 mg
	  ◦ Day 2–3 max 16 mg
	• Give **handout on buprenorphine treatment**.
	• Offer **naloxone kit**.
	• Offer **harm reduction resources**.
	• Plan clinic follow-up.
		• Review **Microdosing Patient Information sheet**.
		• Remind patients that buprenorphine must be taken SL.
		• Write **Rx** until planned follow-up (**max 7 days**).
		• Give **handout on buprenorphine treatment**.
		• Offer **naloxone kit**.
		• Offer **harm reduction resources**.
		• Plan clinic follow-up.
			• Confirm COWS ≥ 13 and at least 18 hours since last fentanyl use
			• Explain process and document consent.
			• Provide 16 mg (2 x 8 mg tablets) buprenorphine SL.
			• Wait 1 hour.
			• Provide an additional 8–16 mg every 1–2 hours until withdrawal is resolved or sedation (maximum 32 mg).
			• Write **Rx** for total amount given until planned follow-up (**max 7 days**).
			• Give handout on **buprenorphine treatment**.
			• Offer **naloxone kit**.
			• Offer **harm reduction resources**.
			• Plan clinic follow-up.

Buprenorphine/Naloxone Reference Guide for ED Providers. META-PHI

https://www.metaphi.ca/wp-content/uploads/ED_OUD_ReferenceGuide.pdf

Ms. LK Outcome

- Stabilized on buprenorphine/naloxone 8mg BID
- Amitriptyline 25 → 50mg HS
- Headache frequency: no longer daily! (~ 4 days per week)
- Not all headaches are “red-alert” – uses acetaminophen for “yellow” and triptan for “red” headaches
- Reduced acetaminophen use to ~ 12 days/month
- Reduced triptan use to ~ 4 days per month
- Mood improved
- Not drinking EtOH
- Joined Tai Chi group
- Wants to start tapering opioid gently!
- Change talk: functional goals, RTW…

Subcutaneous Buprenorphine & Chronic Pain Management?

	Indication	Dose	Serum Concentration
Transdermal	Pain	10 ug/hr (240 ug/ 24 hours)	0.224 ng/mL
Buccal	Pain	120 ug q12 hrs	0.364 ng/mL (+/- 0.125)
Sublingual	Opioid Use Disorder	8 mg daily	3.37 ng/mL (+/- 1.8)
Subcutaneous	Opioid Use Disorder	300 mg q28 days 100mg q28 days	6.54 ng/mL 3.21 ng/mL

Butrans [package insert]. Stamforc(CT): Purdue Pharma L.P.; 2014. Available from: https://www.accessdata.fda.gov/drugsatfda_docs/label/2014/021306s015s019lbl.pdf
Buprenorphine and naloxone. In: Lexi-Drugs [database on the Internet]. Hudson (OH): Lexi-Comp, Inc.; 2018 [cited 2018 Feb 5].
Belbuca [package insert]. Malver(PA): Endo Pharmaceuticals;2015. Available from: https://www.accessdata.fda.gov/drugsatfda_docs/label/2015/207932s000lbl.pdf
Sublocade [package insert]. North Chesterfield(VA): Indivor; 2017. Available from: http://indivior.com/wp-content/uploads/2017/11/SUBLOCADE-Prescribing-Information.pdf

Perioperative Pain Management in Patients Taking Buprenorphine

4 considerations:

- Typical pain and recovery associated with procedure or acute issue
- Baseline buprenorphine dose
- Applicability of multimodal analgesia (eg regional blocks, ketamine, non-pharm)
- Stability of OUD

Perioperative continuation of buprenorphine reduces post-op length of stay and analgesic requirement

NB: Education and Care Coordination

T Hickey et al. Perioperative Buprenorphine Management: A Multidisciplinary Approach Medical Clinics of North America (2022). 106(1): 169-185.
A Goel. Can J Anesth (2019) 66:201-217.

Acute Pain in Patients Taking Buprenorphine

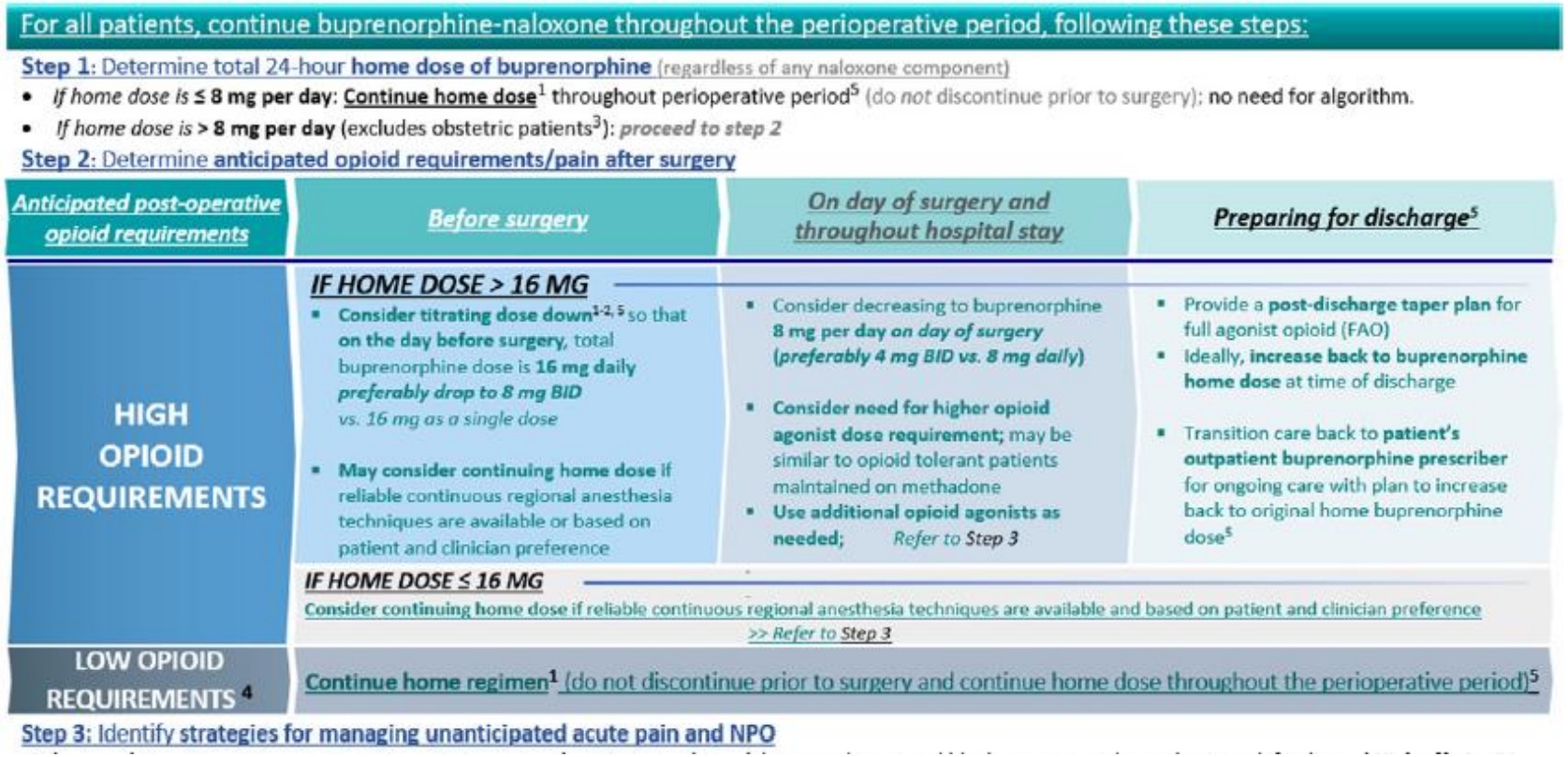
Misconception that buprenorphine will impede acute pain management.

No evidence against continuing buprenorphine perioperatively, especially when the dose is < 16 mg SL daily. ***In patients with significant potential for relapse, such as those with a recent history of OUD, the discontinuation of buprenorphine should have a strong rationale supported by patient and surgical preferences***

Dose Buprenorphine	% Mu-Opioid Receptor Availability
0mg	100%
2mg	~59%
16mg	~20%
32mg	~16%

T Hickey et al. Perioperative Buprenorphine Management: A Multidisciplinary Approach Medical Clinics of North America (2022). 106(1): 169-185.
A Goel. Can J Anesth (2019) 66:201-217.

Perioperative Pain Management in Patients Taking Buprenorphine



For all patients, continue buprenorphine-naloxone throughout the perioperative period, following these steps:

Step 1: Determine total 24-hour **home dose of buprenorphine** (regardless of any naloxone component)

- *If home dose is* **≤ 8 mg per day**: **Continue home dose**[1] throughout perioperative period[5] (do *not* discontinue prior to surgery); **no need for algorithm.**
- *If home dose is* **> 8 mg per day** (excludes obstetric patients[3]): ***proceed to step 2***

Step 2: Determine **anticipated opioid requirements/pain after surgery**

Anticipated post-operative opioid requirements	*Before surgery*	*On day of surgery and throughout hospital stay*	*Preparing for discharge*[5]
HIGH OPIOID REQUIREMENTS	***IF HOME DOSE > 16 MG*** ▪ **Consider titrating dose down**[1-2, 5] so that **on the day before surgery**, total buprenorphine dose is **16 mg daily** ***preferably drop to 8 mg BID*** *vs. 16 mg as a single dose* ▪ **May consider continuing home dose** if reliable continuous regional anesthesia techniques are available or based on patient and clinician preference	▪ Consider decreasing to buprenorphine **8 mg per day *on day of surgery*** ***(preferably 4 mg BID vs. 8 mg daily)*** ▪ **Consider need for higher opioid agonist dose requirement;** may be similar to opioid tolerant patients maintained on methadone ▪ **Use additional opioid agonists as needed;** *Refer to Step 3*	▪ Provide a **post-discharge taper plan** for full agonist opioid (FAO) ▪ Ideally, **increase back to buprenorphine home dose** at time of discharge ▪ Transition care back to **patient's outpatient buprenorphine prescriber** for ongoing care with plan to increase back to original home buprenorphine dose[5]
	IF HOME DOSE ≤ 16 MG **Consider continuing home dose** if reliable continuous regional anesthesia techniques are available and based on patient and clinician preference *>> Refer to Step 3*		
LOW OPIOID REQUIREMENTS[4]	**Continue home regimen**[1] (do not discontinue prior to surgery and continue home dose throughout the perioperative period)[5]		

Step 3: Identify strategies for managing unanticipated acute pain and NPO

S/C Bup (Sublocade)

- Schedule surgery at trough (4-6 weeks post injection)
- Give s/l bup 8mg BID post 28 days

T Hickey et al. Perioperative Buprenorphine Management: A Multidisciplinary Approach. Medical Clinics of North America (2022). 106(1): 169-185.

The heart of the matter…

- Patients with OUD/AUD may require higher dose of opioids for effective analgesia – must be closely monitored
- Multimodal approach to acute pain in ED: iv Tylenol, pain dose ketamine, iv ketorolac; nerve blocks if available and other interventional modalities if indicated/available
- Guidelines don't provide solutions that fit well in the harm-reduction paradigm
- No amount of opioids will ever completely eliminate pain (and in fact exacerbate pain at a certain level)
- Never underestimate the power of your relationship and support
- Both pain and addictions are a marathon, not a sprint… be patient, be present, keep offering treatment

References

Canadian Pain Task Force: https://www.canada.ca/en/health-canada/corporate/about-health-canada/public-engagement/external-advisory-bodies/canadian-pain-task-force/reports-meetings.html

Raja SN, Carr DB, Cohen M, et al. The revised International Association for the Study of Pain definition of pain: concepts, challenges, and compromises. *Pain*. 2020;161(9):1976-1982. doi:10.1097/j.pain.0000000000001939

Panagiotoglou D, McCracken R, Lavergne MR, et al. Evaluating the intended and unintended consequences of opioid-prescribing interventions on primary care in British Columbia, Canada: protocol for a retrospective population-based cohort study. *BMJ Open*. 2020;10(11):e038724. Published 2020 Nov 5. doi:10.1136/bmjopen-2020-038724

Centre for Effective Practice: Chronic Non-Cancer Pain: https://cep.health/clinical-products/chronic-non-cancer-pain/

Clarke H, Bao J, Weinrib A, Dubin RE, Kahan M. Canada's hidden opioid crisis: the health care system's inability to manage high-dose opioid patients: Fallout from the 2017 Canadian opioid guidelines. *Can Fam Physician*. 2019;65(9):612-614.

Volkow ND, Koob GF, McLellan AT. Neurobiologic Advances from the Brain Disease Model of Addiction. *N Engl J Med*. 2016;374(4):363-371. doi:10.1056/NEJMra1511480

Koob GF. Neurobiology of Opioid Addiction: Opponent Process, Hyperkatifeia, and Negative Reinforcement. *Biol Psychiatry*. 2020;87(1):44-53. doi:10.1016/j.biopsych.2019.05.023

References

Smallwood RF, Price LR, Campbell JL, et al. Network Alterations in Comorbid Chronic Pain and Opioid Addiction: An Exploratory Approach. *Front Hum Neurosci*. 2019;13:174. Published 2019 May 29. doi:10.3389/fnhum.2019.00174

Webster L, Gudin J, Raffa RB, et al. Understanding Buprenorphine for Use in Chronic Pain: Expert Opinion. *Pain Med*. 2020;21(4):714-723. doi:10.1093/pm/pnz356

Kampman K, Jarvis M. American Society of Addiction Medicine (ASAM) National Practice Guideline for the Use of Medications in the Treatment of Addiction Involving Opioid Use. *J Addict Med*. 2015;9(5):358-367. doi:10.1097/ADM.0000000000000166

T Hickey et al. Perioperative Buprenorphine Management: A Multidisciplinary Approach Medical Clinics of North America (2022). 106(1): 169-185.

Goel A, Azargive S, Lamba W, et al. The perioperative patient on buprenorphine: a systematic review of perioperative management strategies and patient outcomes. Le patient en période périopératoire sous buprénorphine : revue systématique des stratégies de gestion périopératoire et de l'évolution des patients. *Can J Anaesth*. 2019;66(2):201-217. doi:10.1007/s12630-018-1255-3

Poet Maya Angelou on Terrance…*Homo sum nihil humani a me alienum puto* https://www.oprah.com/own-master-class/the-lesson-dr-maya-angelou-is-still-studying-in-her-80s-video

For patient perspectives on opioid prescribing: https://choosingwiselycanada.org/perspective/cautious-but- compassionate-approach-to-opioid-prescribing/

Thank You

Questions?

camh

andrew.smith@camh.ca