



Assessing and Addressing Complex Pain

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MedNet21
Center for Continuing Medical Education

 **THE OHIO STATE UNIVERSITY**
WEXNER MEDICAL CENTER

Late night page...

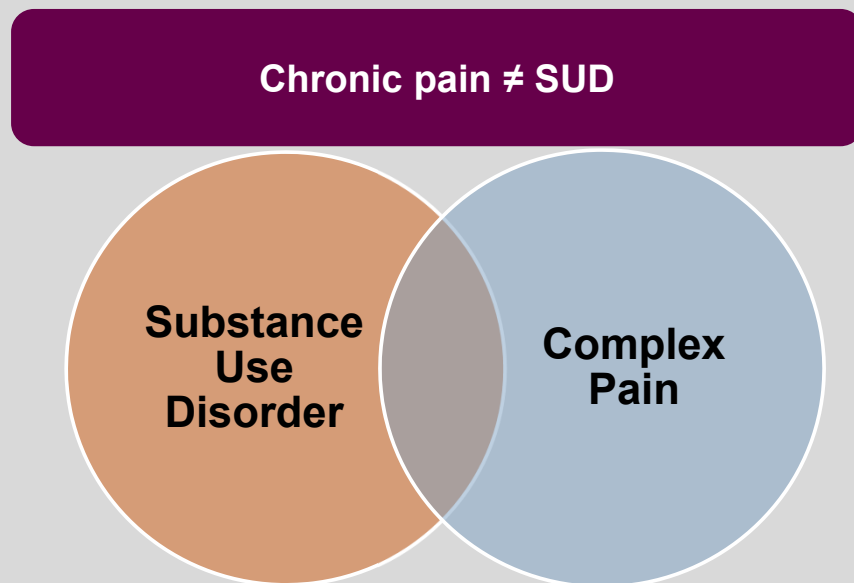


Patient JM complaining
10/10 pain, wants more IV
hydromorphone, not due yet.
Please advise -#####

Learning objectives

1. Diagnose major components of complex pain
2. Identify appropriate treatments for complex pain
3. Distinguish complex pain from substance use disorder
4. Describe specific strategies for talking to patients about pain

Terminology faux-pas



Appropriate language

**YES**

Substance use disorder

vs

Opioid abuser
Alcoholic
Addict

Opioid

vs

Narcotic

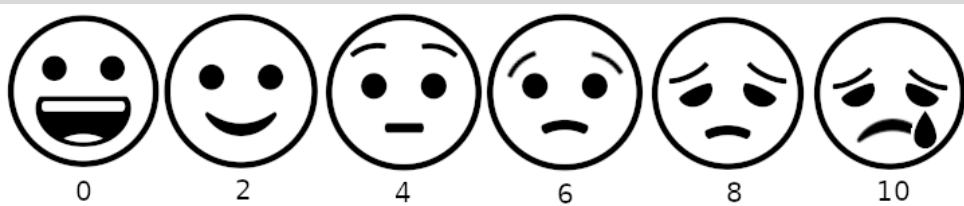
"Risky medication"

vs

"Risky patient"

**NO**

What is pain?



What is pain?

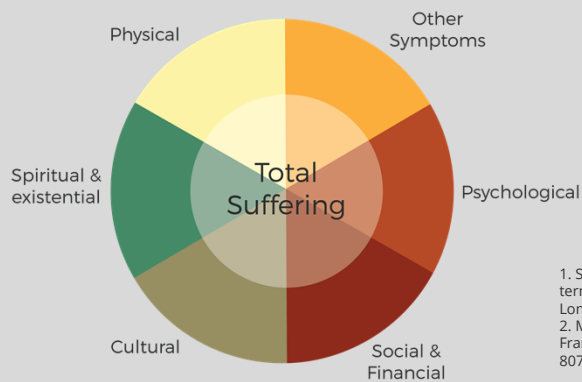
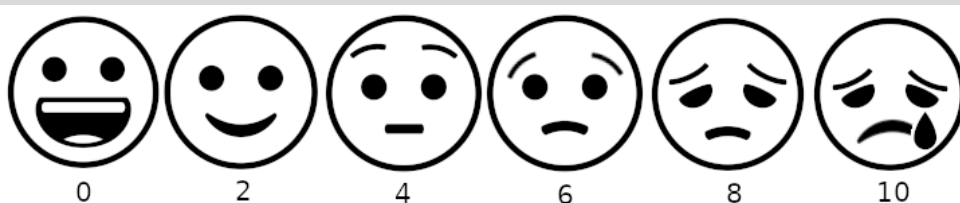


Figure used with permission from Pallium Canada.

1. Saunders CM. The management of terminal malignant disease, 3rd ed. London: Edward Arnold; 1993.
2. Man's Search for Meaning, Viktor Frankl. Beacon Press, 2006, ISBN 978-0-8070-1426-4



Pain system



Pain system

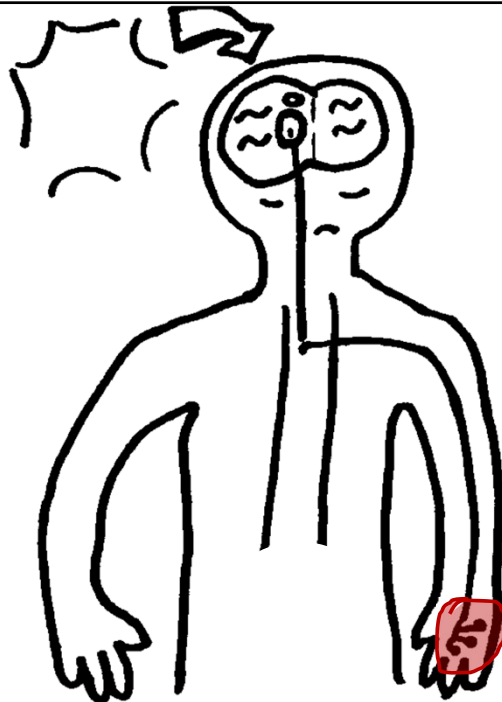
Nociceptors



Pain system

Nociceptors

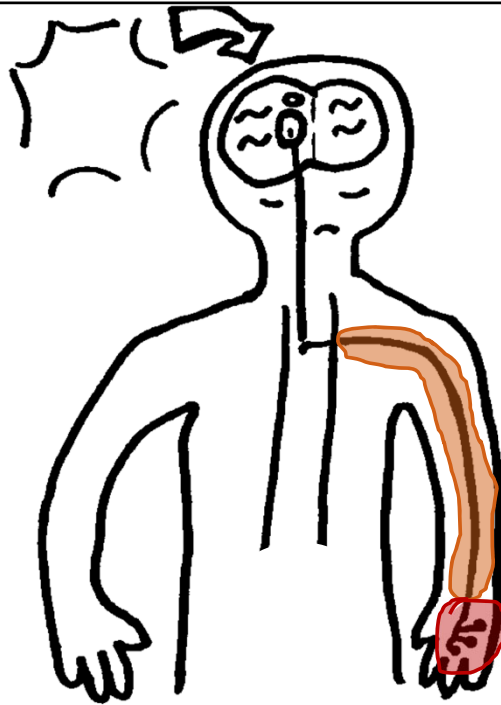
- Mechanical
- Chemical
- Temperature
- (Stretch)



Pain system

Nociceptors

Peripheral nerve

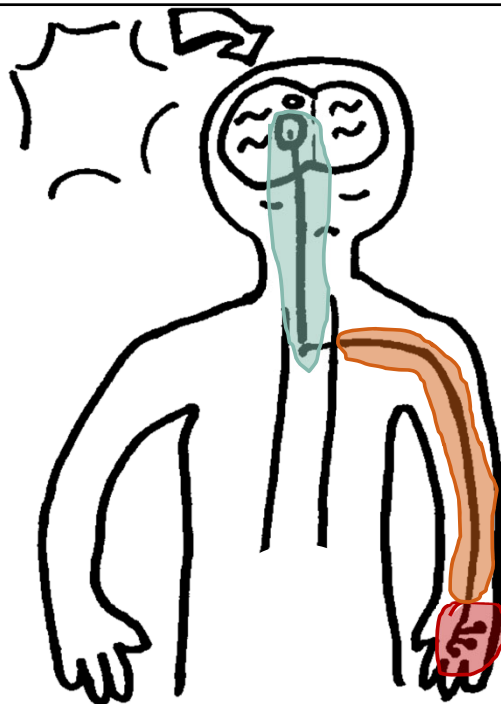


Pain system

Nociceptors

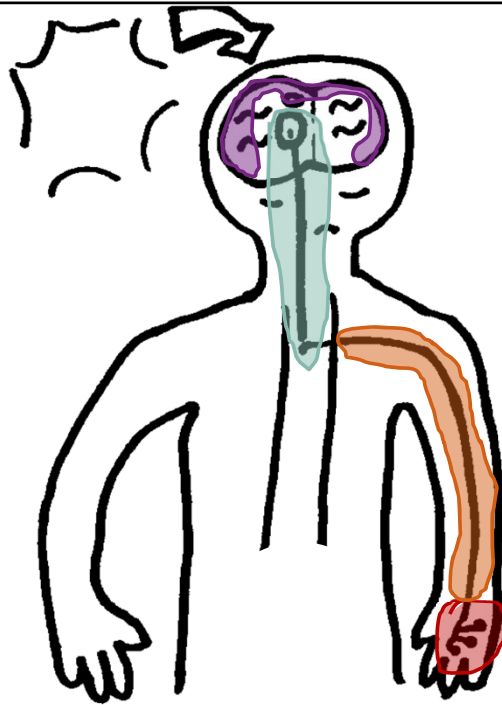
Peripheral nerve

Central Spinal Cord
Processing



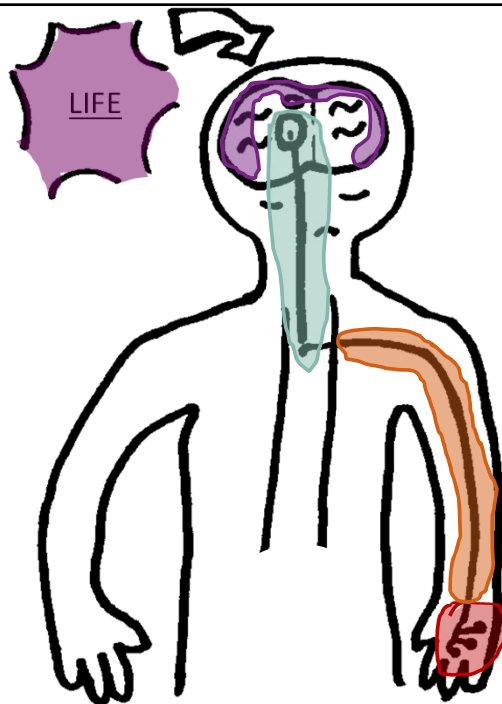
Pain system

Nociceptors
Peripheral nerve
Central Spinal Cord Processing
Supratentorial Input



Pain system

Nociceptors
Peripheral nerve
Central Spinal Cord Processing
Supratentorial Input



Pain system

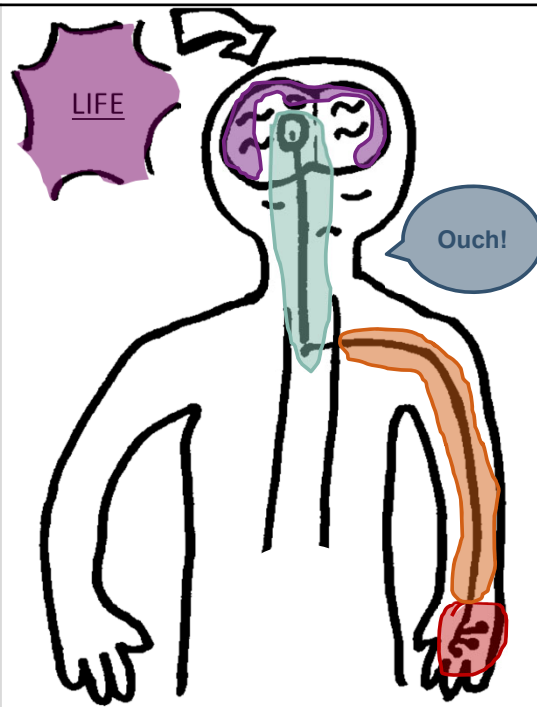
Nociceptors

Peripheral nerve

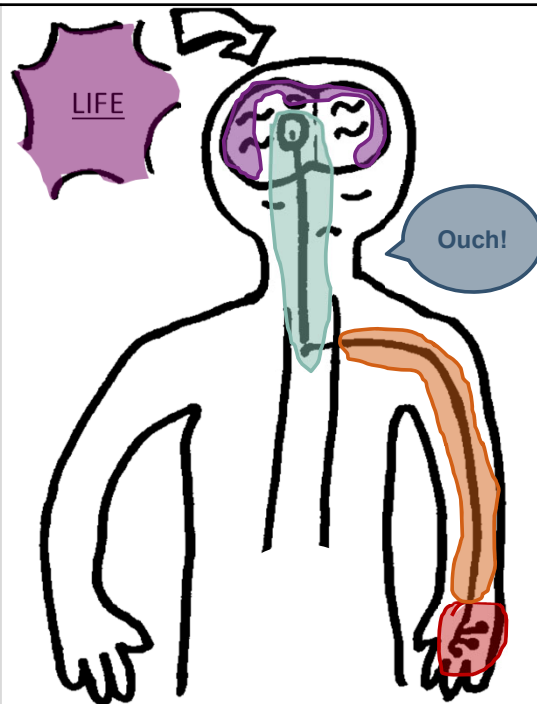
**Central Spinal Cord
Processing**

Supratentorial Input

**Conscious pain
experience**



Pain Types



Pain Types

Nociceptive pain

- “Normal” pain triggers
- Physiologic hyperalgesia



Pain Types

Nociceptive pain

- “Normal” pain triggers
- Physiologic hyperalgesia

Diagnosis – Somatic

- Well localized
- Sharp, aching, throbbing
- Usually worse with movement, better with rest
- Usually a clear clinical explanation



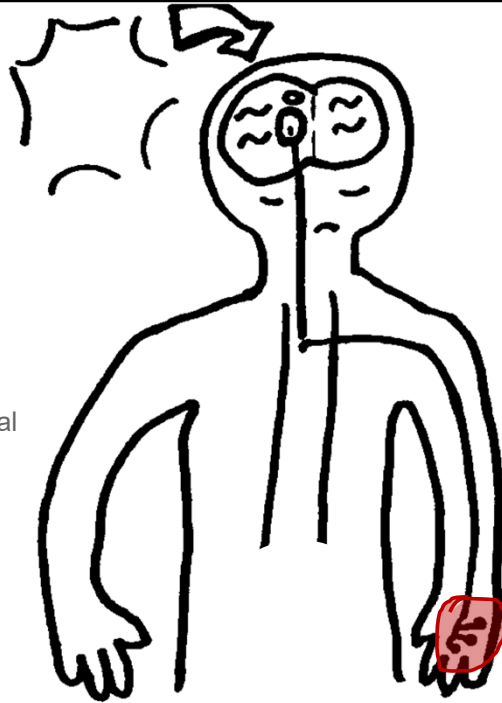
Pain Types

Nociceptive pain

- “Normal” pain triggers
- Physiologic hyperalgesia

Diagnosis - Visceral

- Injury to soft tissues or viscera of internal organs
- Poorly localized
- Stretching, squeezing, cramping, dull, colic, aching (deep)
- Hard to describe



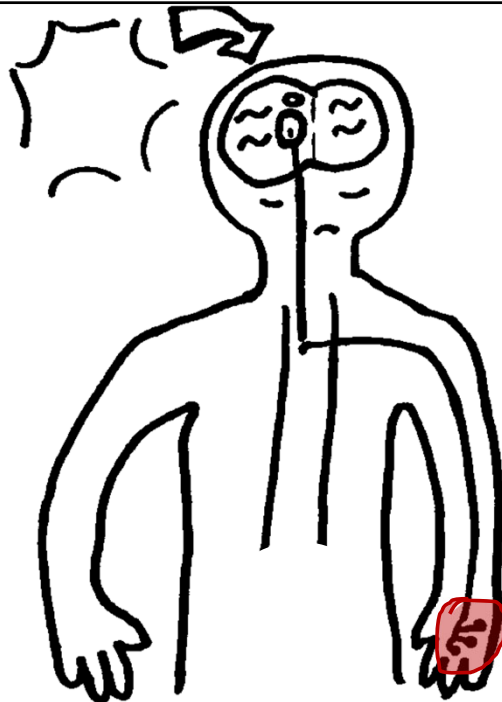
Pain Types

Nociceptive pain

- “Normal” pain triggers
- Physiologic hyperalgesia

Treatments

- NSAIDs
- Steroids (dexamethasone)
- Lidocaine
- Opioids



Pain Types

Peripheral Nerve Pain

- Axonal damage
- Erratic or absent APs
- CNS does its best to interpret



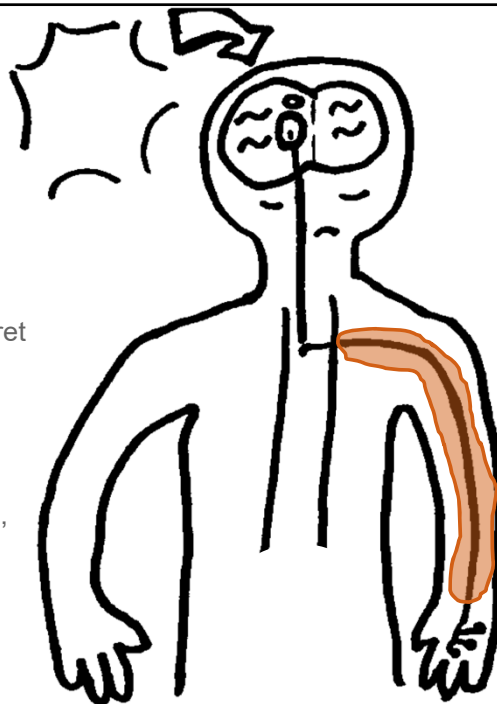
Pain Types

Peripheral Nerve Pain

- Axonal damage
- Erratic or absent APs
- CNS does its best to interpret

Diagnosis

- Damage to nervous system
- Burning, shooting, stabbing, electrical, numbness



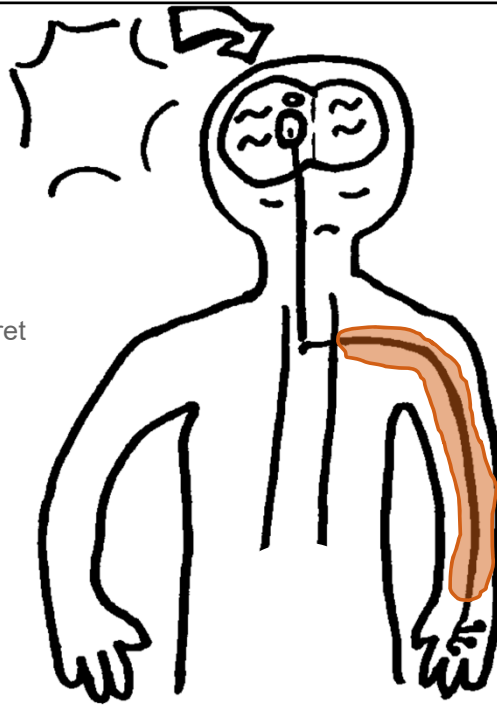
Pain Types

Peripheral Nerve Pain

- Axonal damage
- Erratic or absent APs
- CNS does its best to interpret

Treatments

- SNRI
- TCAs
- Gabapentin/pregabalin
- Capsaicin/menthol
- Systemic lidocaine
- Opioids



Pain Types

Central Nerve Pain

- Dysregulation of ascending and descending signals
- Altered receptor expression
- Central hyperalgesia



Pain Types

Central Nerve Pain

- Dysregulation of ascending and descending signals
- Altered receptor expression
- Central hyperalgesia

Diagnosis

- Typically have chronic pain history
- Vaguely described, diffuse, or migratory pain
- Does not respond for long when opioids increased



Central hyperalgesia

Figure adapted from Pergolizzi et al 2010 with permission.

Central hyperalgesia



Figure adapted from: Pergolizzi J. Pain Pract. 2010;10(5):428-50.

Central hyperalgesia

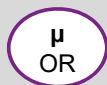


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Central hyperalgesia

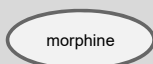
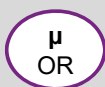


Figure adapted from: Pergolizzi J. Pain Pract. 2010;10(5):428-50.

Central hyperalgesia

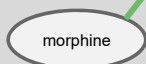
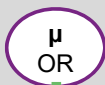


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Central hyperalgesia

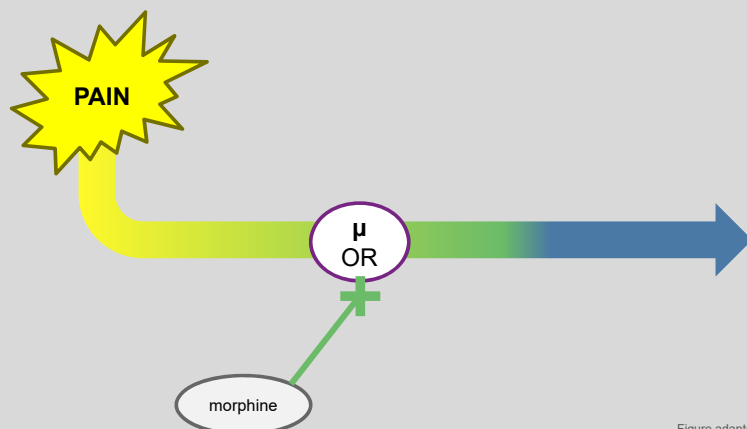


Figure adapted from: Pergolizzi J. Pain Pract. 2010;10(5):428-50.

Central hyperalgesia

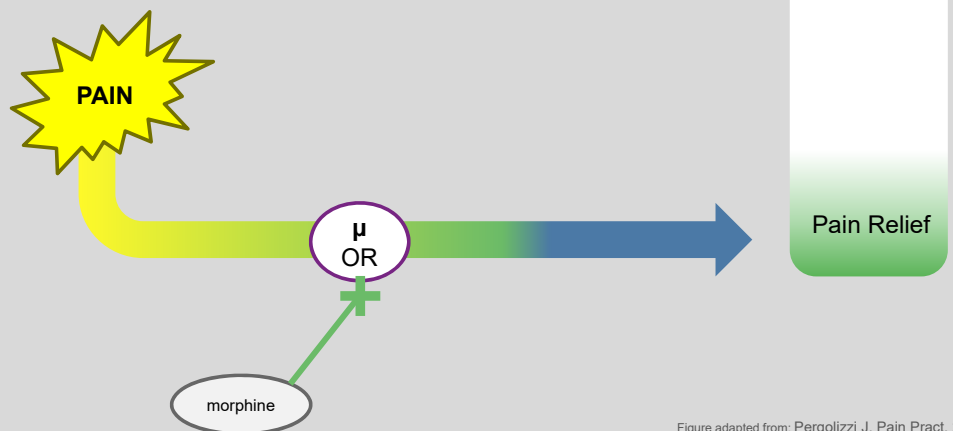
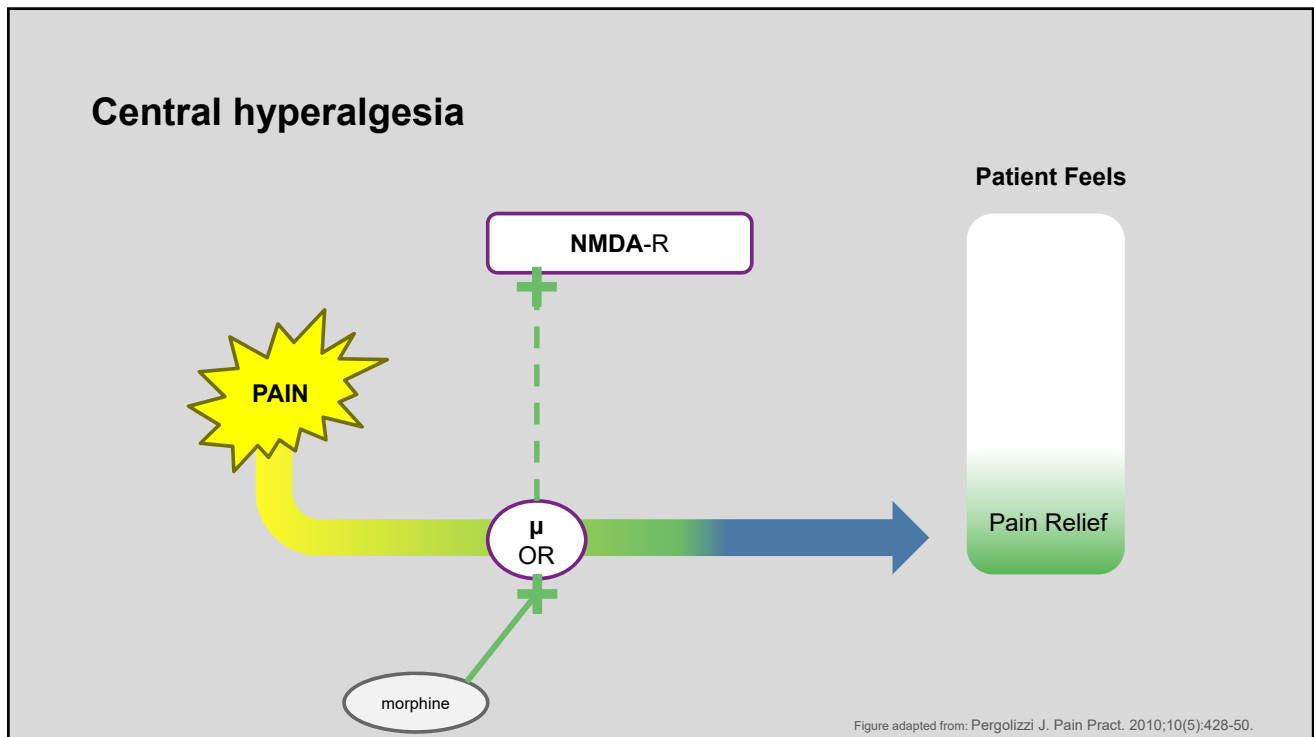
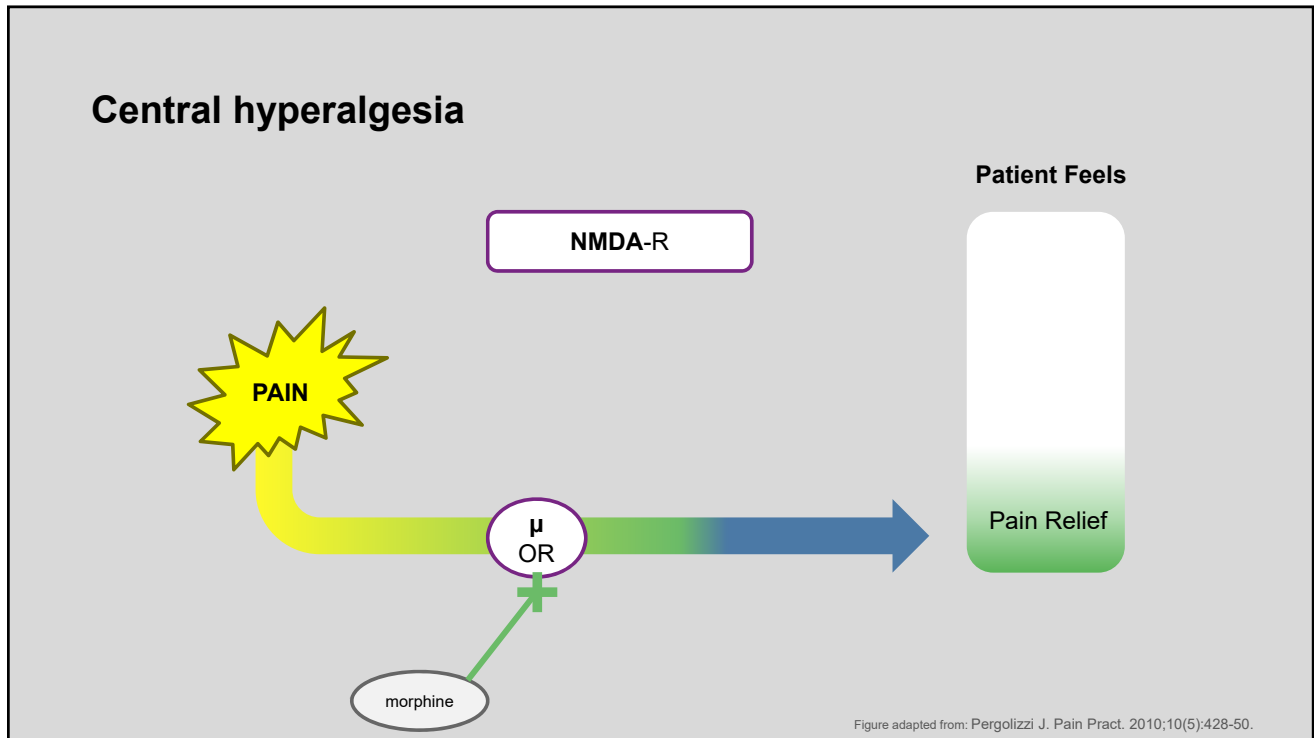
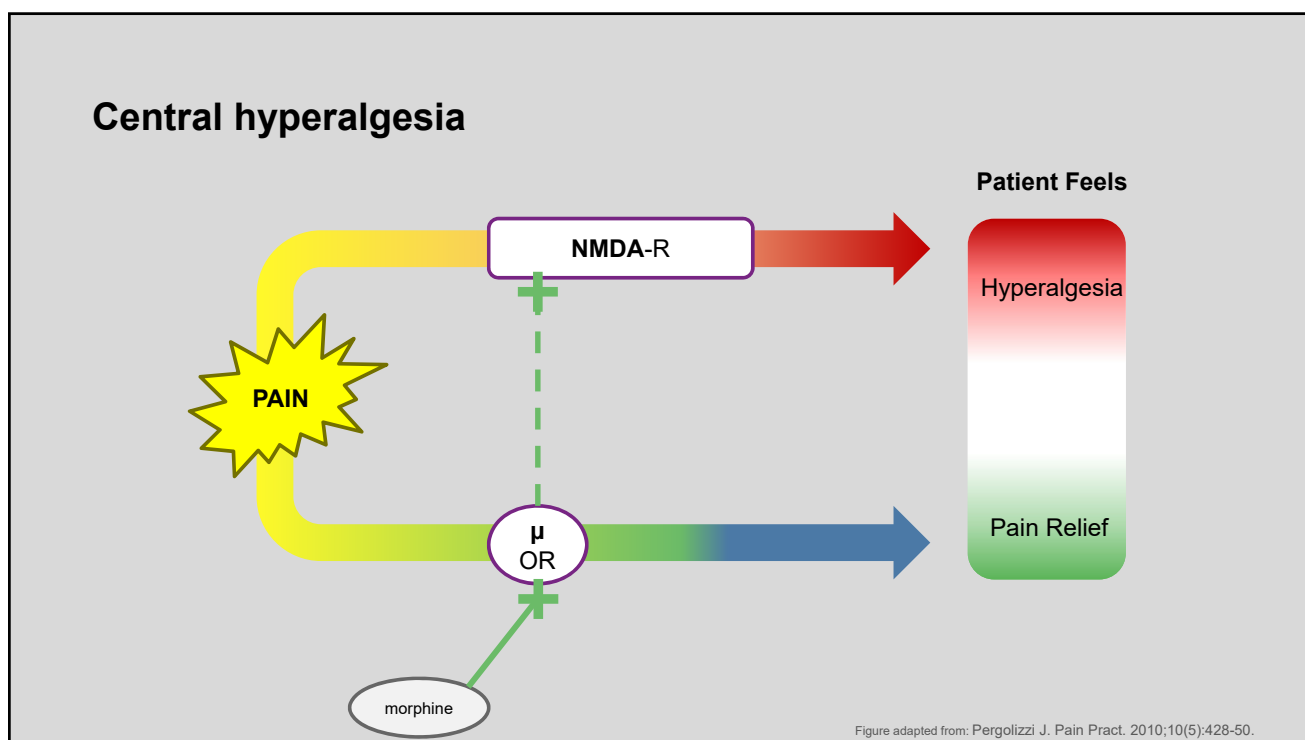
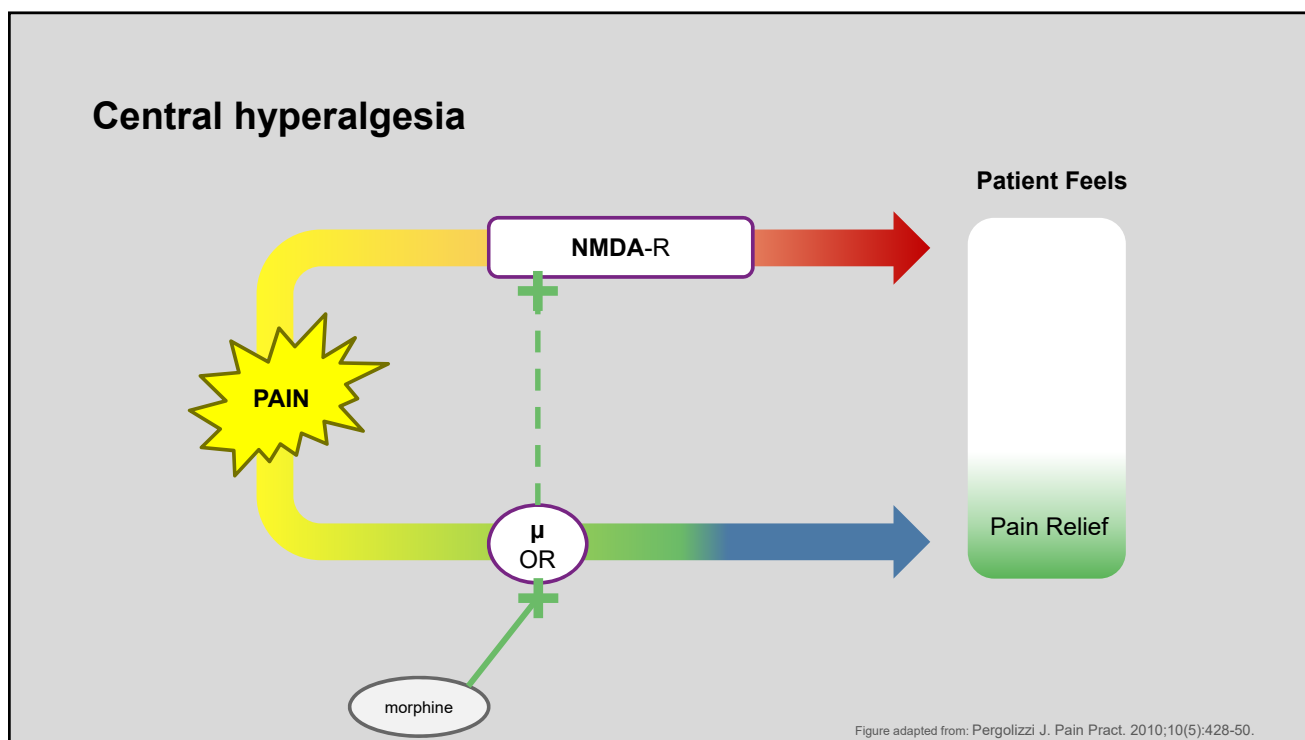
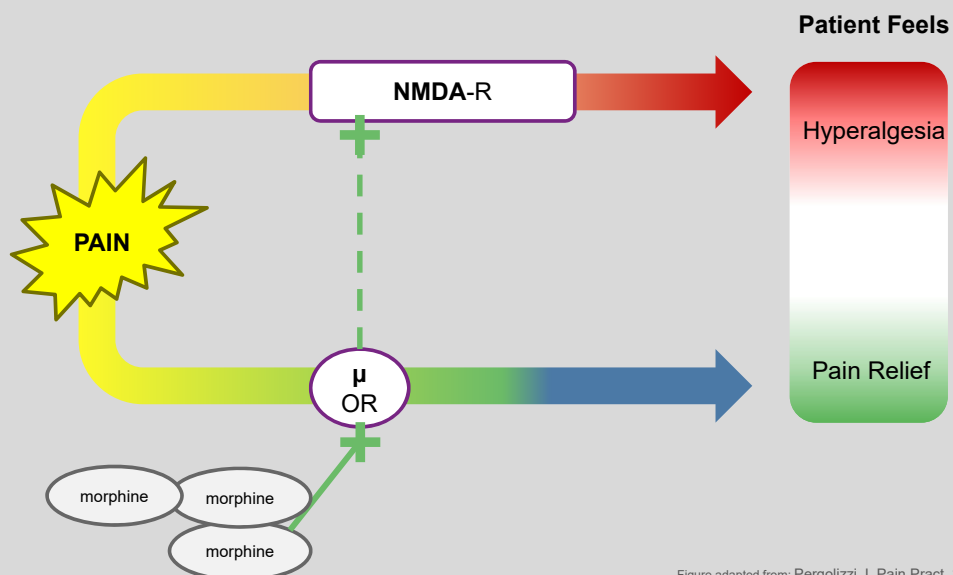


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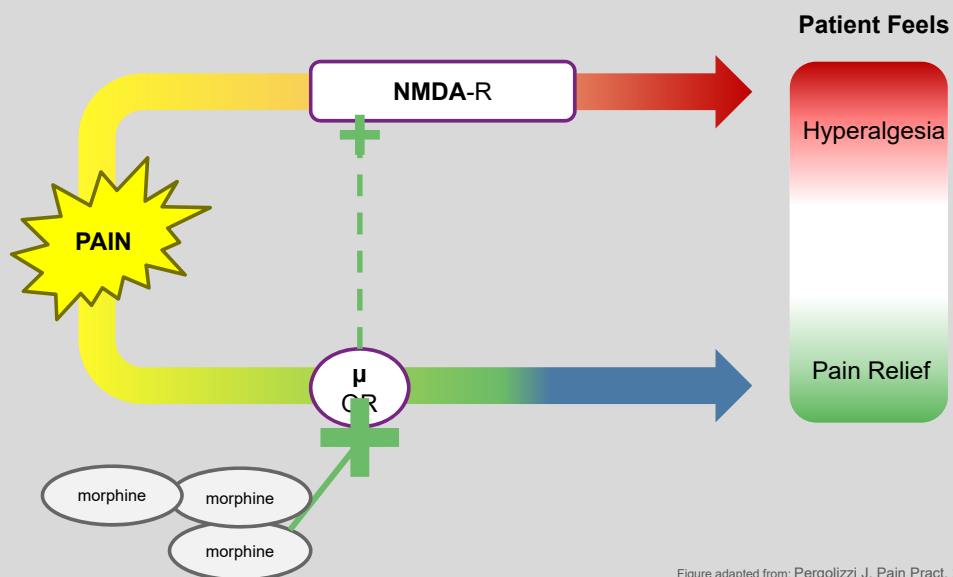




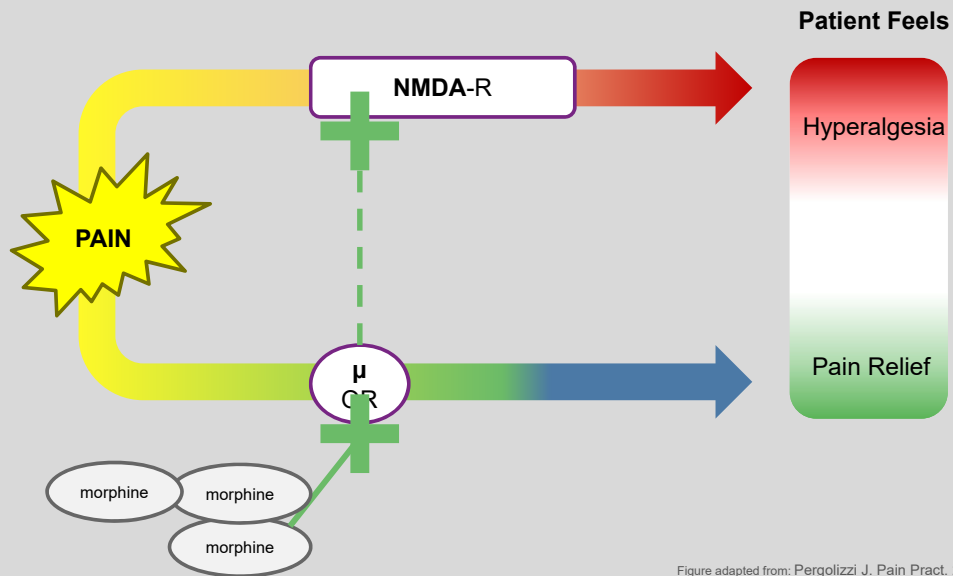
Central hyperalgesia



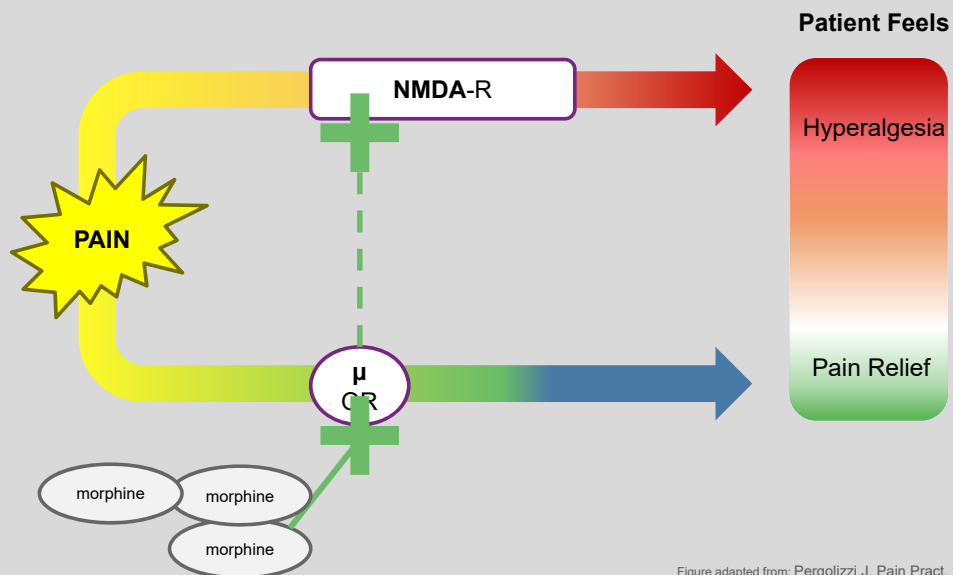
Central hyperalgesia

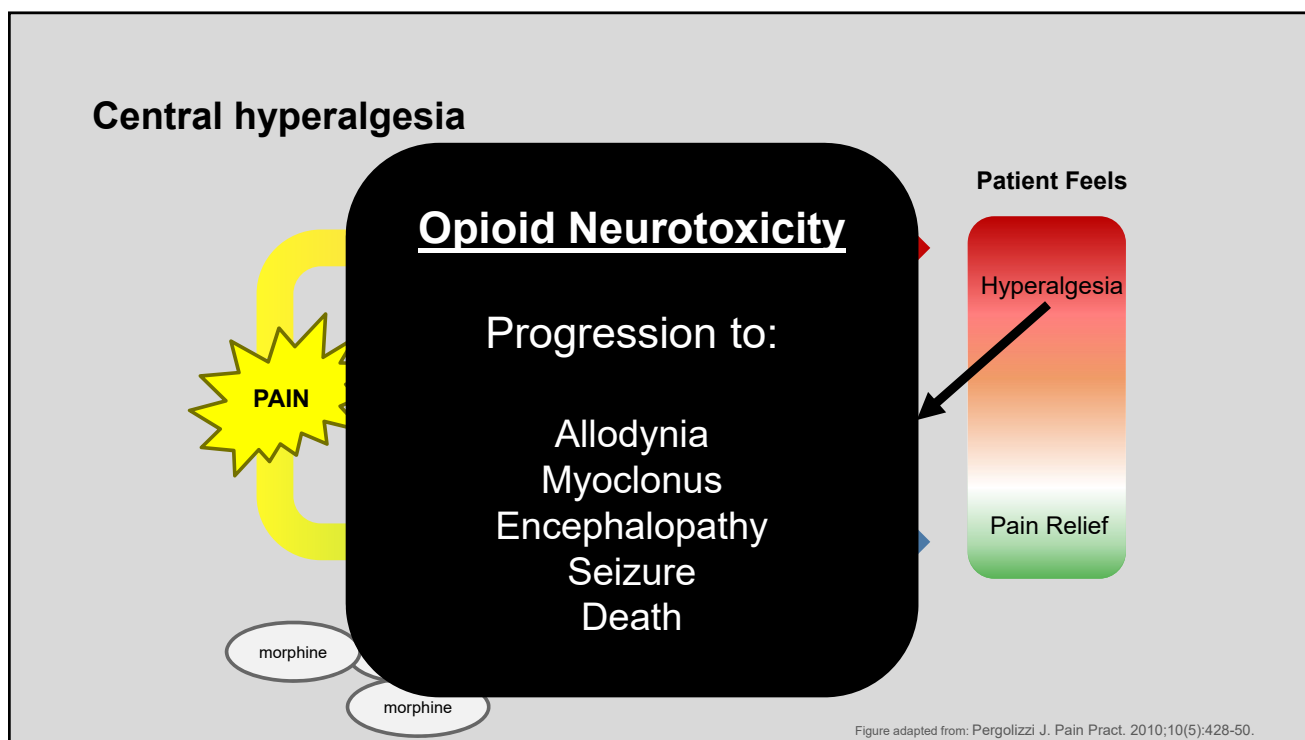


Central hyperalgesia



Central hyperalgesia





Opioid neurotoxicity

Opioid neurotoxicity

- History findings

Opioid neurotoxicity

- History findings
 - Opioid increases only help temporarily
 - Side effects from opioids without pain relief

Opioid neurotoxicity

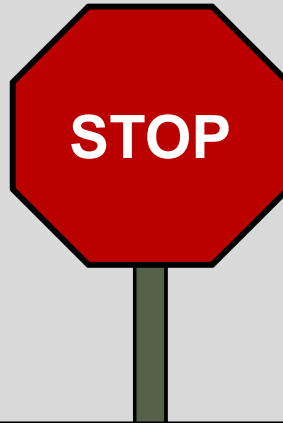
- History findings
 - Opioid increases only help temporarily
 - Side effects from opioids without pain relief
- Physical exam findings

Opioid neurotoxicity

- History findings
 - Opioid increases only help temporarily
 - Side effects from opioids without pain relief
- Physical exam findings
 - Hyperalgesia
 - Myoclonic jerks
 - Drowsiness

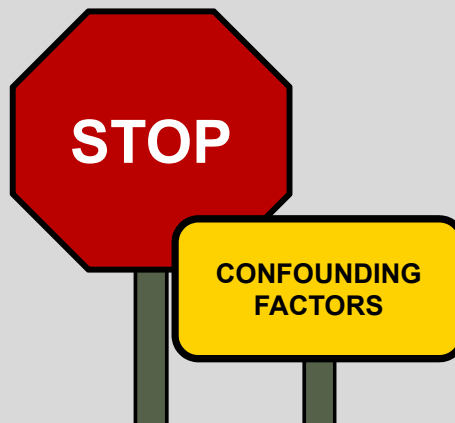
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Confounding factors

CONFOUNDING
FACTORS

Confounding factors

- Another cause of increased pain

CONFOUNDING
FACTORS

Confounding factors

- Another cause of increased pain
 - Acute medical condition
 - Disease progression

**CONFOUNDING
FACTORS**

Confounding factors

- Another cause of increased pain
 - Acute medical condition
 - Disease progression
- Gabapentin toxicity

**CONFOUNDING
FACTORS**

Confounding factors

- Another cause of increased pain
 - Acute medical condition
 - Disease progression
- Gabapentin toxicity
- Reduced medication clearance

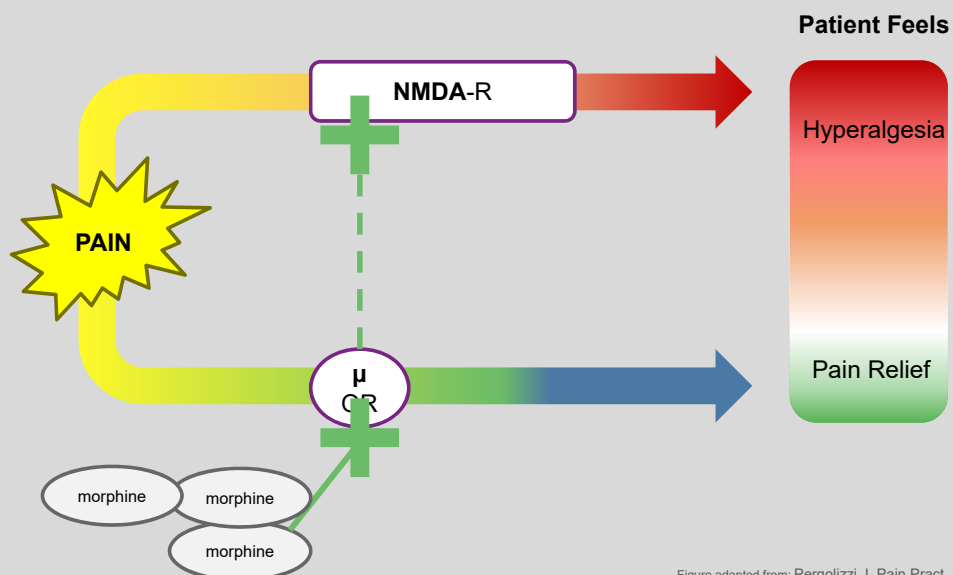
**CONFOUNDING
FACTORS**

Confounding factors

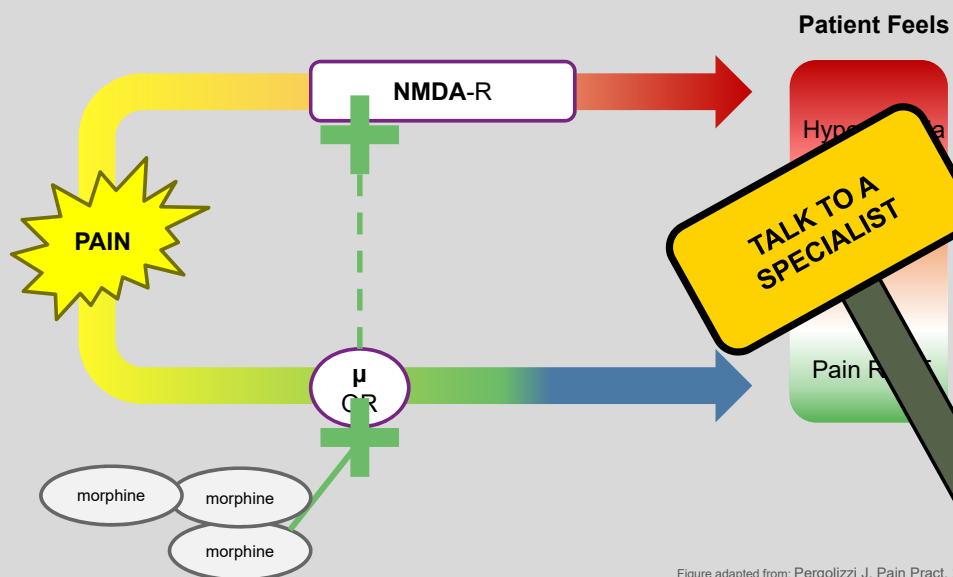
- Another cause of increased pain
 - Acute medical condition
 - Disease progression
- Gabapentin toxicity
- Reduced medication clearance
- Existential distress

**CONFOUNDING
FACTORS**

Treating opioid hyperalgesia



Treating opioid hyperalgesia



Treating opioid hyperalgesia

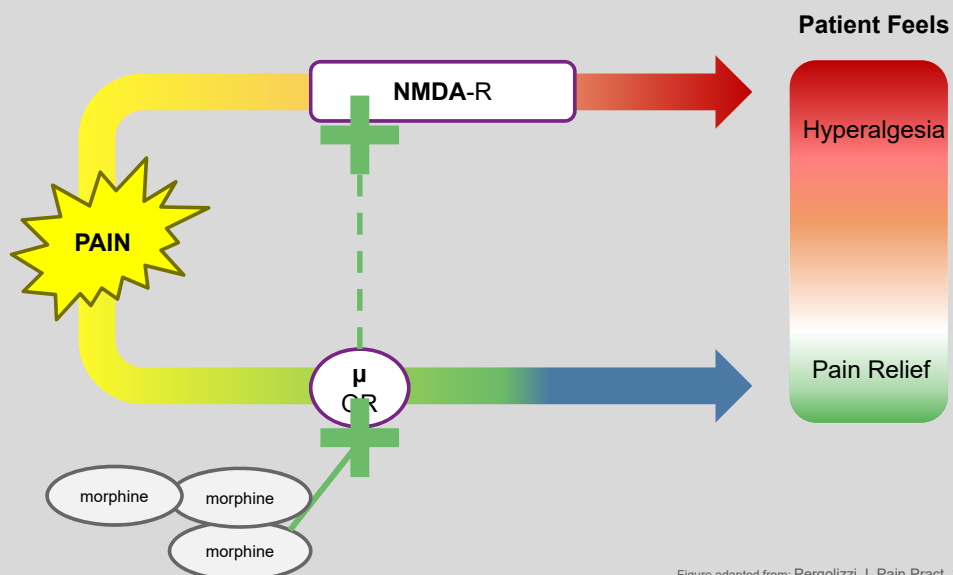


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Treating opioid hyperalgesia

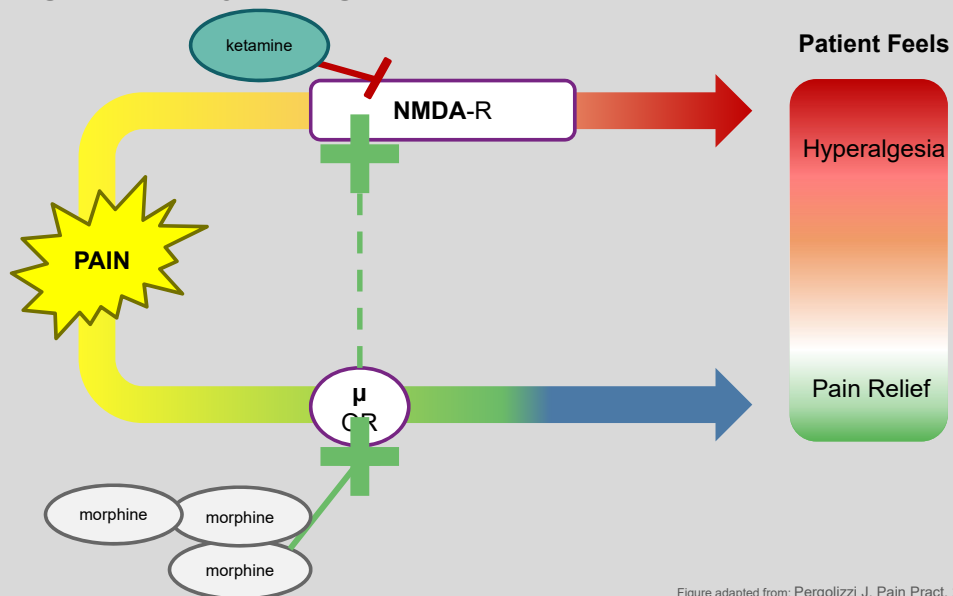


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Treating opioid hyperalgesia

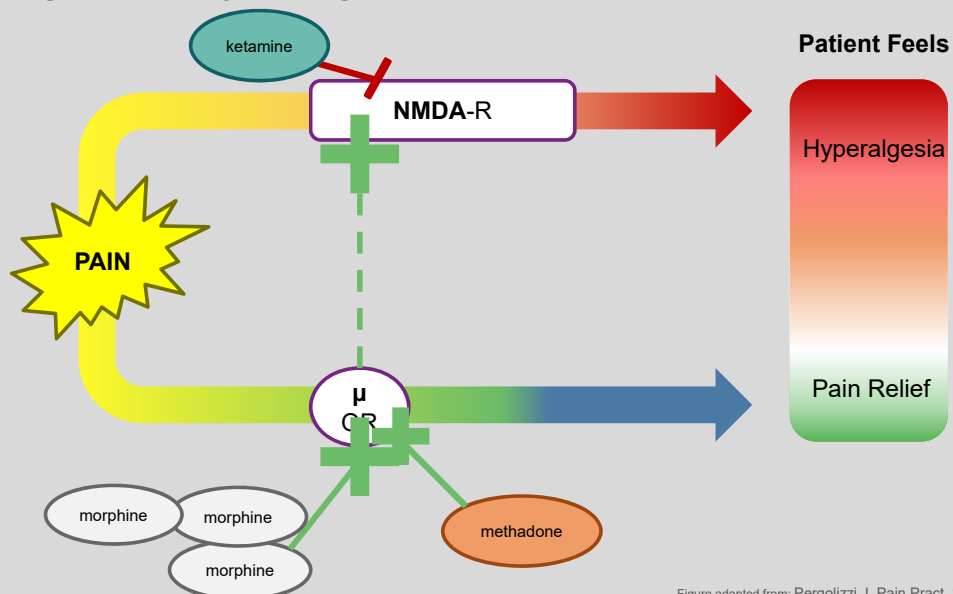


Figure adapted from: Pergolizzi J. Pain Pract. 2010;10(5):428-50.

Treating opioid hyperalgesia

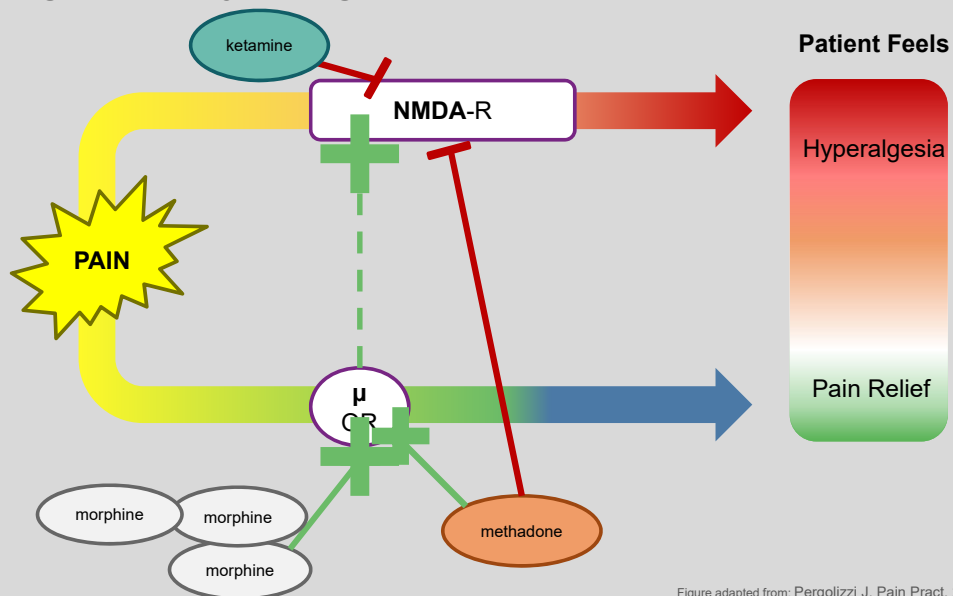


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Pain Types

Central Nerve Pain

- Dysregulation of ascending and descending signals
- Altered receptor expression
- Central hyperalgesia



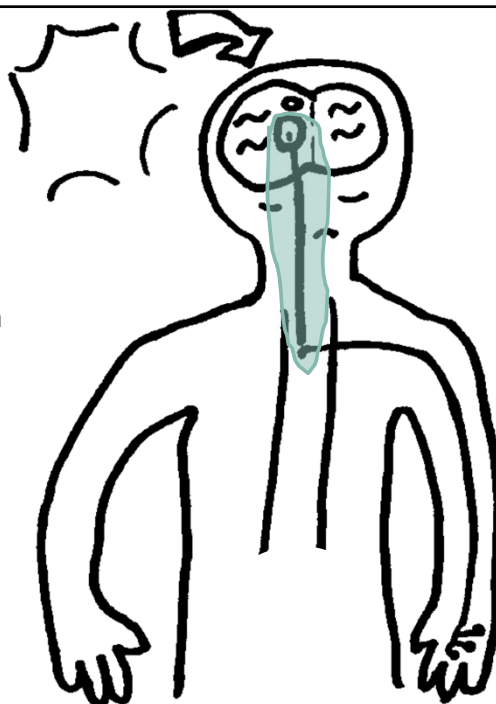
Pain Types

Central Nerve Pain

- Dysregulation of ascending and descending signals
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Treatments

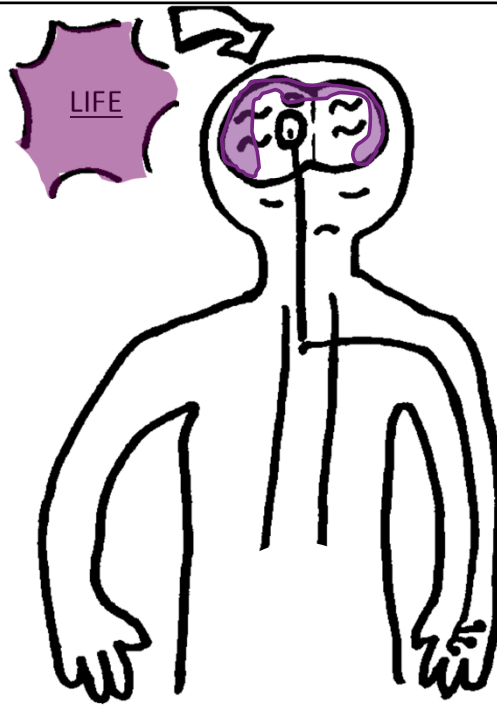
- SNRI
- TCA
- Gabapentin/pregabalin
- Ketamine
- Methadone
- Buprenorphine



How does it break?

Existential pain

- Attention matters
- Prior experiences matter
- Mood matters
- Coping matters



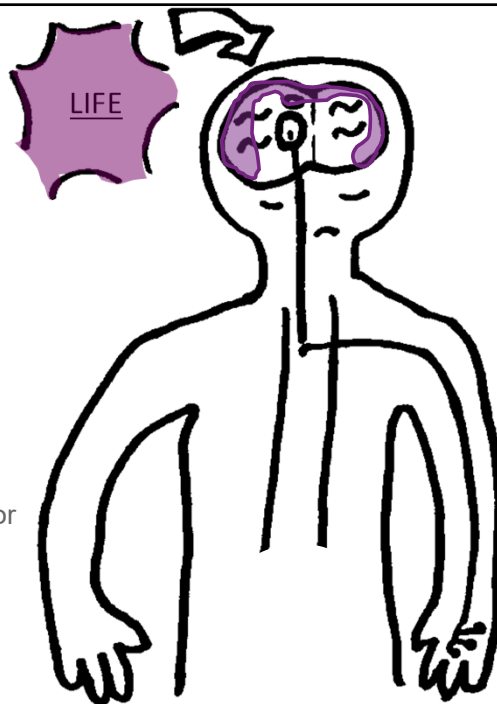
How does it break?

Existential pain

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- Mood matters
- Coping matters

Diagnosis

- Grief, anxiety, depression, or trauma amplify pain experience
- Anxiolysis sometimes reduces pain



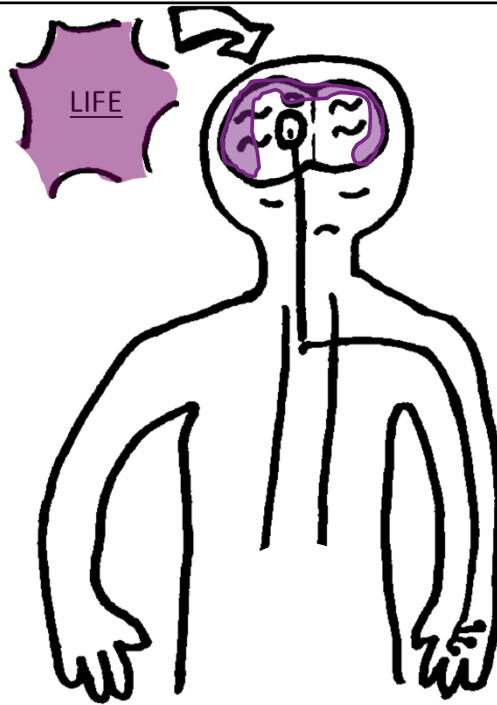
How does it break?

Existential pain

- Attention matters
- Prior experiences matter
- Mood matters
- Coping matters

Treatments

- Address the underlying problem
- CBT



Can opioids relieve existential pain?

Can opioids relieve existential pain?

Yes, BUT...

Can opioids relieve existential pain?

Yes, BUT...

It is sometimes via the rewards system
(not central spinal cord receptors)

Can opioids relieve existential pain?

Yes, BUT...

It is sometimes via the rewards system
(not central spinal cord receptors)

and when this happens,
opioids have high risk of harm.

Spectrum of pain relief from opioids

Spectrum of pain relief from opioids



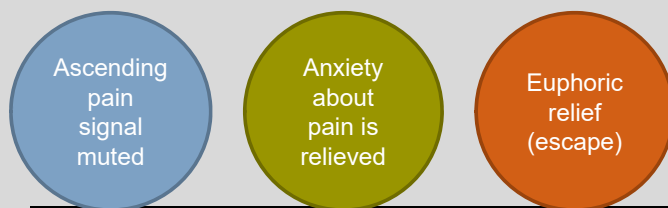
Spectrum of pain relief from opioids



Spectrum of pain relief from opioids



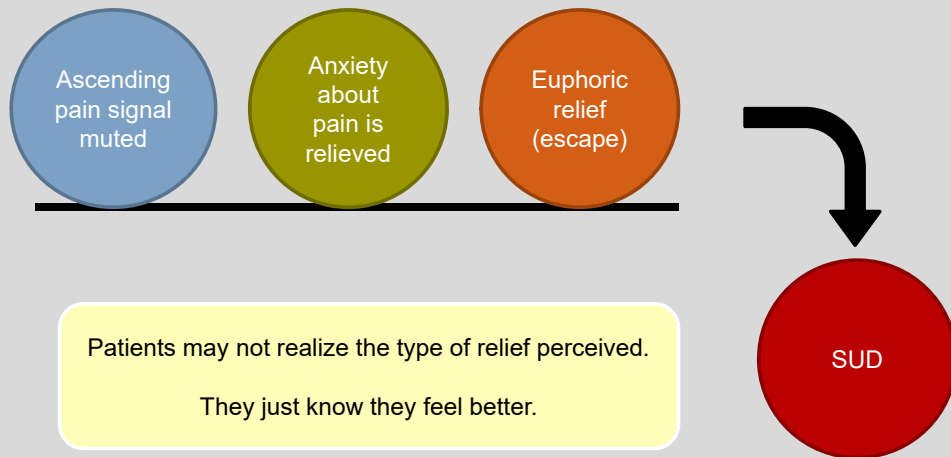
Spectrum of pain relief from opioids



Patients may not realize the type of relief perceived.

They just know they feel better.

Spectrum of pain relief from opioids



Harm in treating pain with opioid euphoria

Harm in treating pain with opioid euphoria

- 1) Rapid tolerance to opioid euphoria effects

Harm in treating pain with opioid euphoria

- 1) Rapid tolerance to opioid euphoria effects
- 2) Increased risk of neurotoxicity

Harm in treating pain with opioid euphoria

- 1) Rapid tolerance to opioid euphoria effects
- 2) Increased risk of neurotoxicity
- 3) Underlying causes not addressed properly

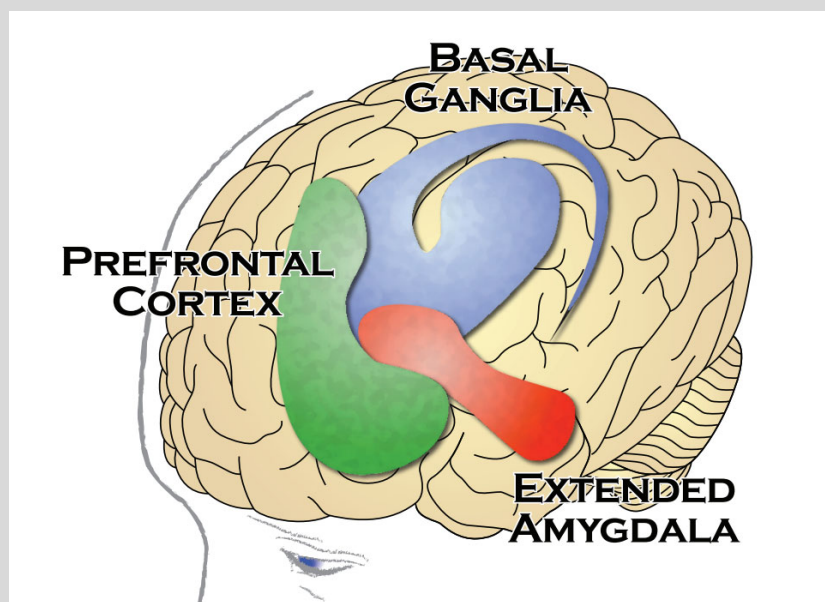
Harm in treating pain with opioid euphoria

- 1) Rapid tolerance to opioid euphoria effects
- 2) Increased risk of neurotoxicity
- 3) Underlying causes not addressed properly
- 4) Increased risk of developing SUD

What is substance use disorder?

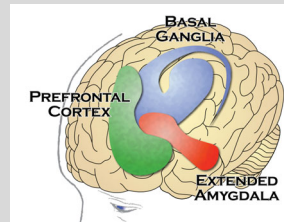
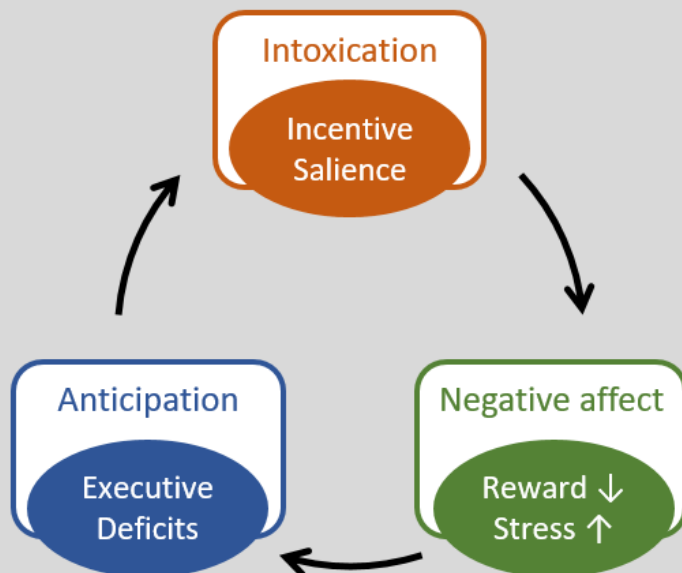
- 11 criteria in DSM V
 - Impaired control
 - Social impairment
 - Risky use
 - Pharmacologic
- Degrees of severity
 - Mild = 2-3 criteria
 - Moderate = 4-5 criteria
 - Severe = 6+ criteria

Brain Changes in SUD



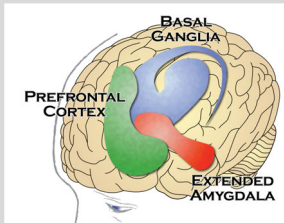
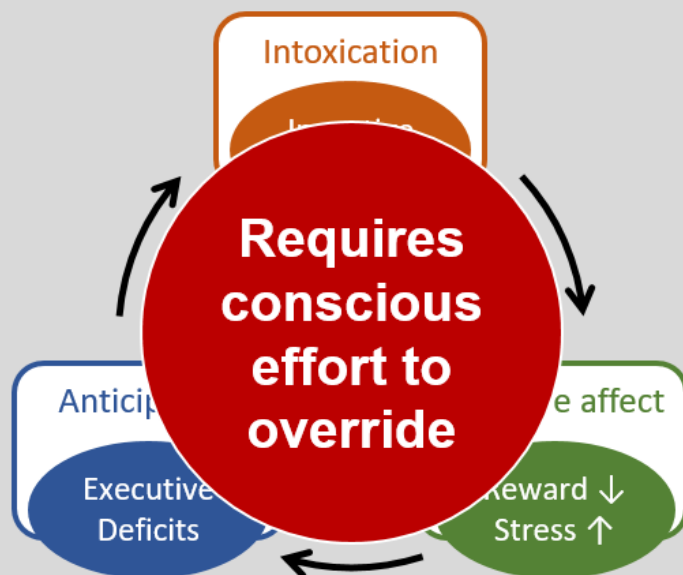
Source: National Institute
on Alcohol Abuse and
Alcoholism

The SUD Cycle



Source: National Institute on Alcohol Abuse and Alcoholism

The SUD Cycle

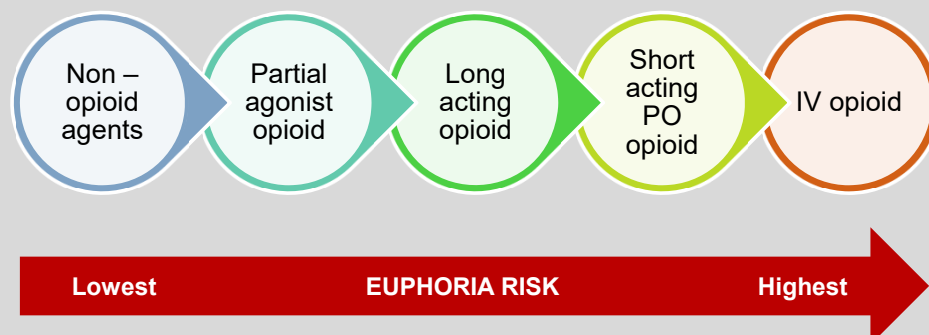


Source: National Institute on Alcohol Abuse and Alcoholism

SUD management principles

- Break the cycle of cravings and use
- Avoid triggers
- Improve impulse control
- Develop positive coping mechanisms

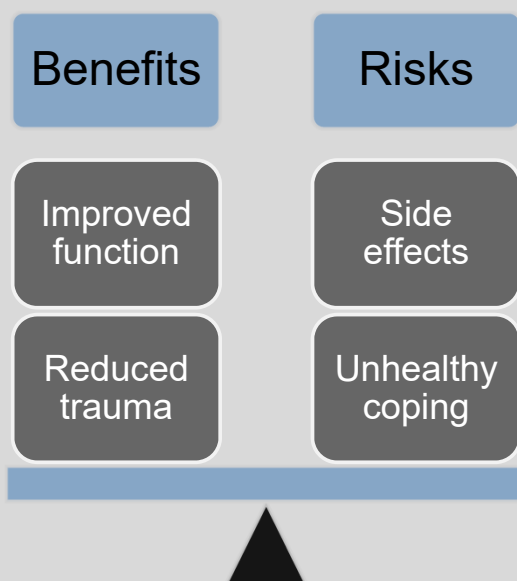
Reducing euphoria risk



Opioids have risks, BUT...



Balancing risks and benefits of opioids



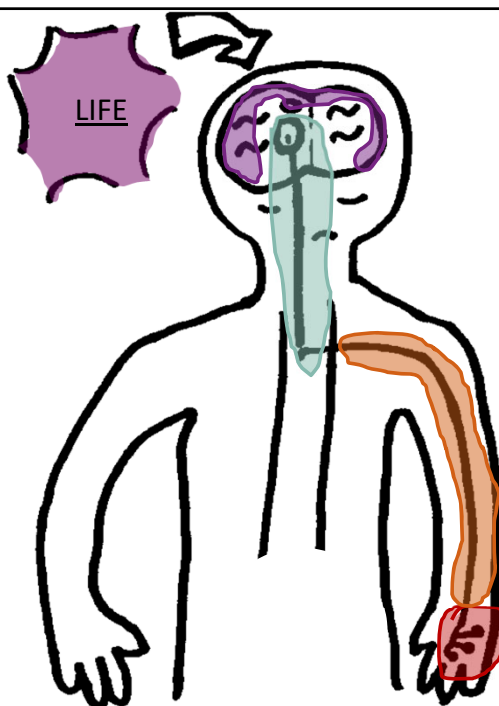
Late night page...



Patient JM complaining
10/10 pain, wants more IV
hydromorphone, not due yet.
Please advise -#####

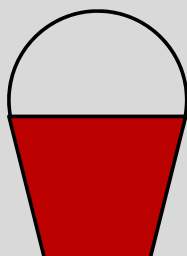
Pain Types

Nociceptive
Peripheral neuropathic
Central neuropathic
Existential



Pain Types

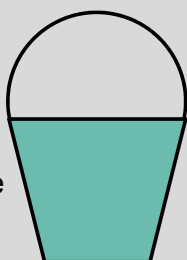
Nociceptive
Pain



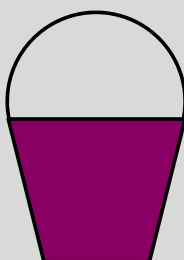
Peripheral
Nerve Pain



Central Nerve
Pain



Existential
Pain



Diagnostic clues

Nociceptive Pain

- History, exam, diagnostics

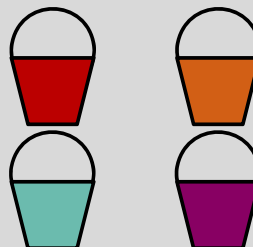


Diagnostic clues**Nociceptive Pain**

- History, exam, diagnostics

Peripheral nerve pain

- Pain features
- Clinical assessment

**Diagnostic clues****Nociceptive Pain**

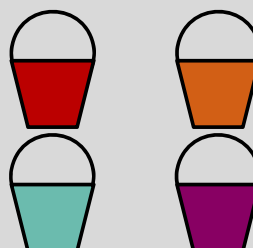
- History, exam, diagnostics

Peripheral nerve pain

- Pain features
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Central pain syndrome

- Clinical suspicion
- Escalating medication with worsening pain
- Signs of opioid toxicity on exam



Diagnostic clues**Nociceptive Pain**

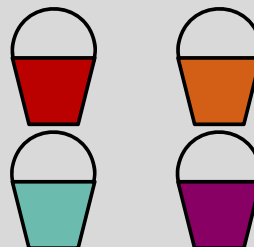
- History, exam, diagnostics

Peripheral nerve pain

- Pain features
- Clinical assessment

Central pain syndrome

- Clinical suspicion
- Escalating medication with worsening pain
- Signs of opioid toxicity on exam

**Existential pain**

- Escalating medication without relief
- Instantaneous relief (<5 min) from IV opioid
- Pain relief with anxiolysis

DDx for additional IV opioid request

DDx for additional IV opioid request

- New painful condition developing

DDx for additional IV opioid request

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- **Dose failure**

DDx for additional IV opioid request

- New painful condition developing
- **Dose failure**
 - PO opioid is under dosed compared to IV
 - Total dose is insufficient

DDx for additional IV opioid request

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- **Dose failure**
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DDx for additional IV opioid request

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- Fear of uncontrolled pain
- Pain type not (or only partially) opioid responsive

DDx for additional IV opioid request

- New painful condition developing
- **Dose failure**
 - PO opioid is under dosed compared to IV
 - Total dose is insufficient
- Fear of uncontrolled pain
- Pain type not (or only partially) opioid responsive
- Willful manipulation due to SUD

Communication tips

- Sit down
- Take a thorough pain history
- Maintain neutral (non-judgmental) tone
- Screen for mood/anxiety disorders
- Screen for overall patient wellbeing
- Start with what you are going to do, not with what's going to stop or not be done
- Communicate with your colleagues!

Takeaways

- Managing complex pain requires careful attention
- Multimodal treatment plans are essential
- Substance use disorder is distinct from complex pain
- Opioids play an important role in certain pain syndromes

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