

Chronic Pain

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What is Chronic Pain?

- Acute Pain: has a protective function, often results from disease, inflammation, or injury to tissues. It generally comes on suddenly and have a concise duration.
- Chronic Non-cancer Pain: is considered a disease itself (although it may result after injury or illness) and it can be influenced by environmental and psychological factors. It is resistant to most medical treatments.
- Non-Opioid Medical treatment of Chronic pain.
- OUD (opioid use disorder) treatment:
Buprenorphine.
- Buprenorphine for Chronic pain.

Pain

- 2018, the IASP formed a 14-member, multinational Presidential Task Force comprising individuals with broad expertise in clinical and basic science to consider the current IASP definition of pain established in 1979:

“An unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage.”

- After two years of deliberation IASP recommended definition revised to:

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

Chronic pain in America

- 20 percent of the adult population suffer chronic pain in the United States, with many experiencing more than one type of chronic pain.
- For every 10,000 PEOPLE with severe pain, there is only ONE BOARD-CERTIFIED pain specialist.
- Chronic Pain is the leading cause of long-term disability in the United States.
- Chronic pain has biopsychosocial implications. It is associated with REDUCED QUALITY OF LIFE, including increased risk of anxiety and depression

Pain Impacts life.

Paingry—Feeling angry because you are in pain or discomfort.

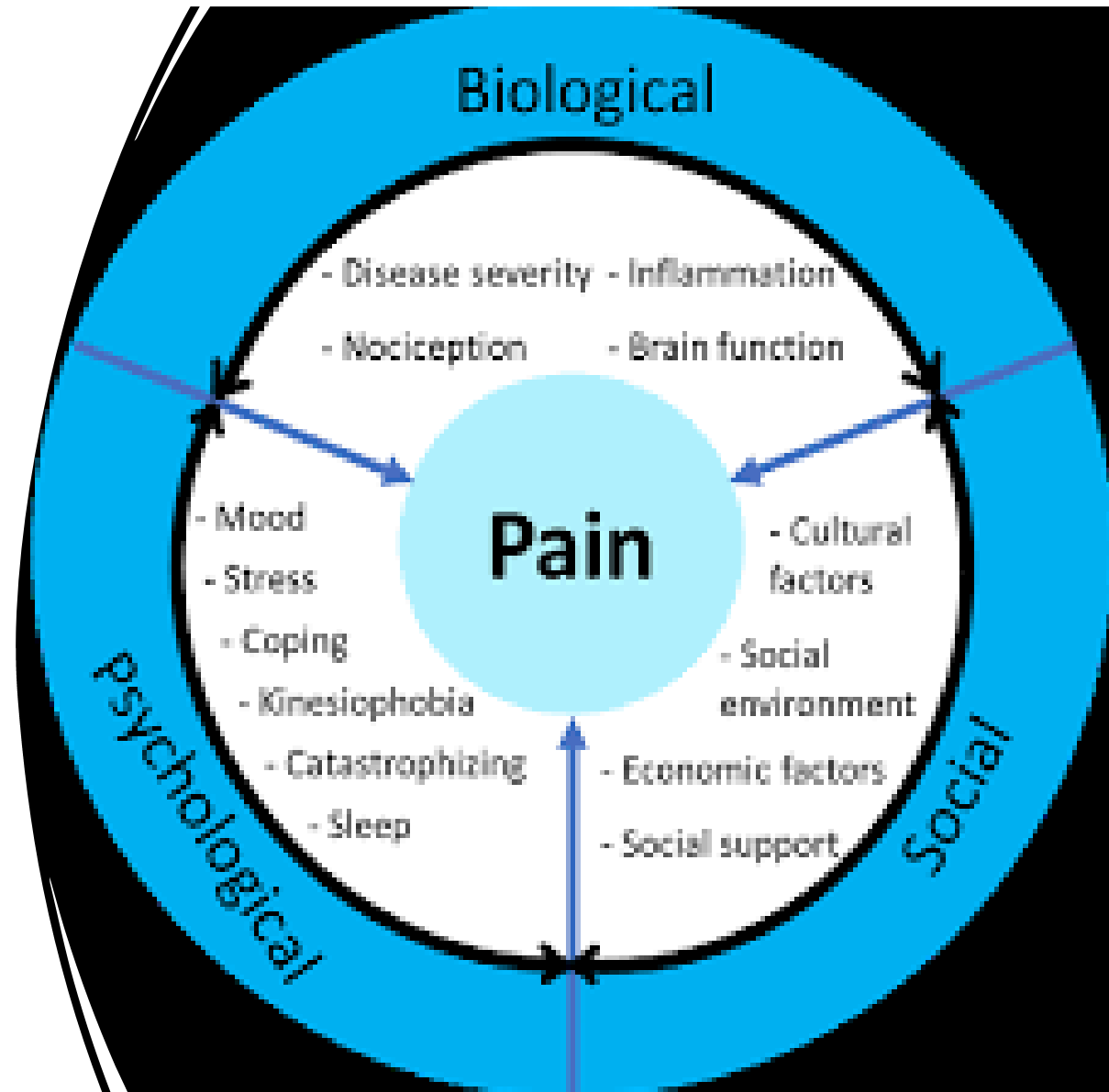
Painxiety

- Feeling of anxiety due to being in an excessive amount of pain.

Painsomnia

- Inability to fall asleep or stay asleep due to prolonged and severe pain.

Pain
BioPsychoSocial
model



THE DIFFERENCE BETWEEN ACUTE & CHRONIC PAIN



ACUTE

- > Comes on suddenly
- > Usually the result of trauma, injury, surgery, or something similar
- > Lasts 6 months or less
- > Relieved when cause is treated



CHRONIC

- > Comes on gradually
- > Usually the result of conditions that are difficult to treat or diagnose
- > Lasts more than 6 months
- > Difficult to find lasting relief

Decartes pain pathway 1664-foot in
fire=pain stimulus

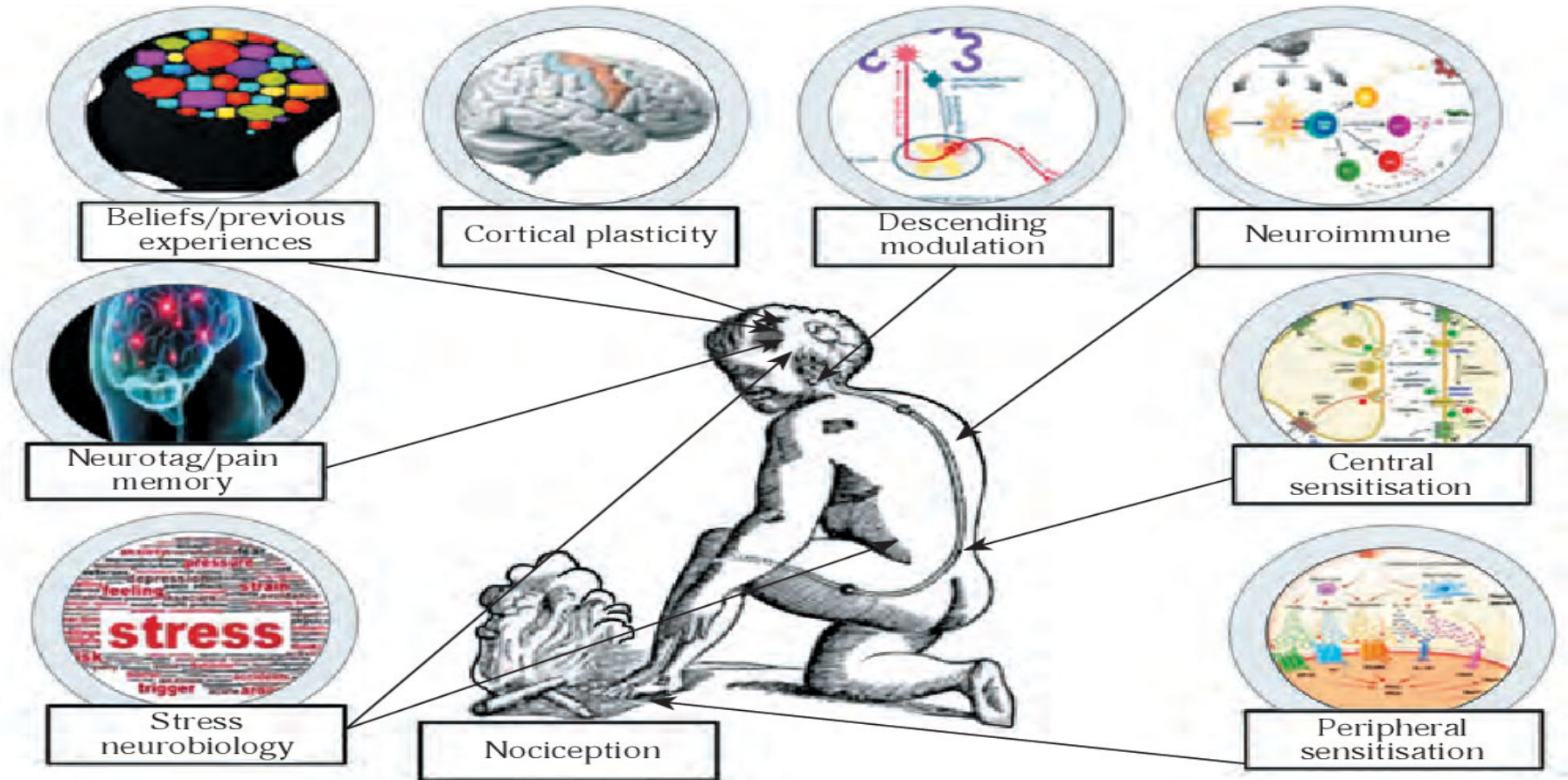
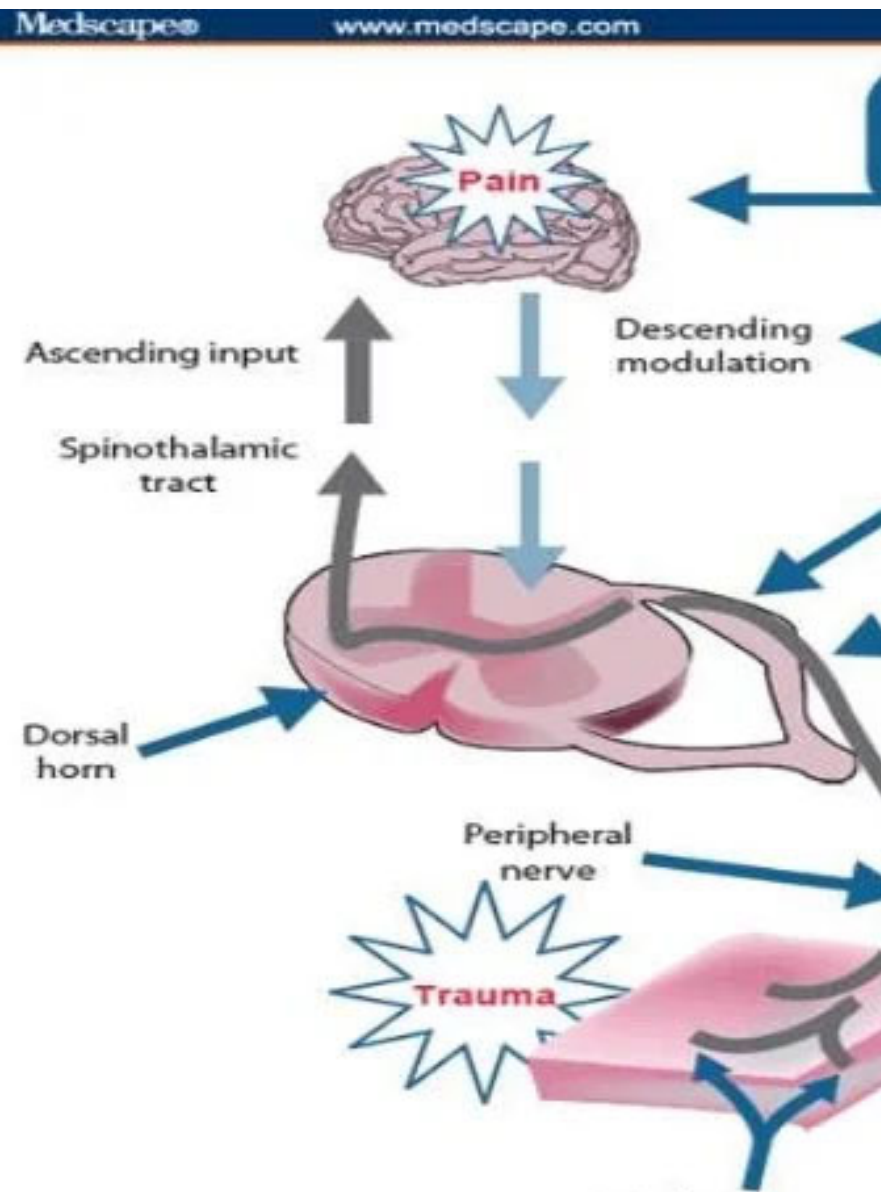


FIG. 9. The Decartes Pain Pathway. Adapted from: *Journal of Pain* (2017)



Acute pain
pain lasting
less than 3-6
months.

- Treatment options:

- *Physical*=> RICE= Rest, Ice, Compress, Elevate.

- *Medication*=>

- Acetaminophen, celecoxib, meloxicam, ketorolac, gabapentinoids, Topical Lidocaine, Emergency Room provide Peripheral nerve block or IV ketamine.

Opioids should only be used if Acute Pain is Severe Pain AND in addition to above strategies.

Chronic pain

Chronic pain is one of the most common reasons that patients seek medical attention.

Healthcare professionals define chronic pain as pain that is present every day or most days that lasts longer than 3 months.

Chronic pain can persist for months or years. It can also be **continuous** such as the pain associated with arthritis, or **intermittent** such as the pain associated with episodic migraine.

According to a 2022 study, chronic pain is one of the most common chronic conditions affecting people in the United States. More than 20% of adults report experiencing pain most days or every day.

Chronic pain symptoms depend on the cause. Some feelings people with chronic pain describe include: aching, burning, having stiffness or numbness, throbbing, shooting pains, stinging.

There are different types of chronic pain: **Phantom pain, Neuropathic pain, Central pain.**

Potential causes of Chronic Pain:

Chronic pain generally follows an initial health condition. The condition can include:

- shingles
- spinal cord injury, Intervertebral disc pathology.
- stroke
- migraine
- osteoporosis
- rheumatoid arthritis
- **lower back pain, neck pain, spinal arthritis.**
- sickle cell anemia
- However, a person can experience chronic pain with no apparent injury. This may refer to a condition called **Fibromyalgia**. The exact causes of this condition are largely unknown. However, current theories suggest that there is an issue with pain processing in the central nervous system.

Chronic Pain

Pain related to damage of somatic or visceral tissue as a result of trauma or inflammation

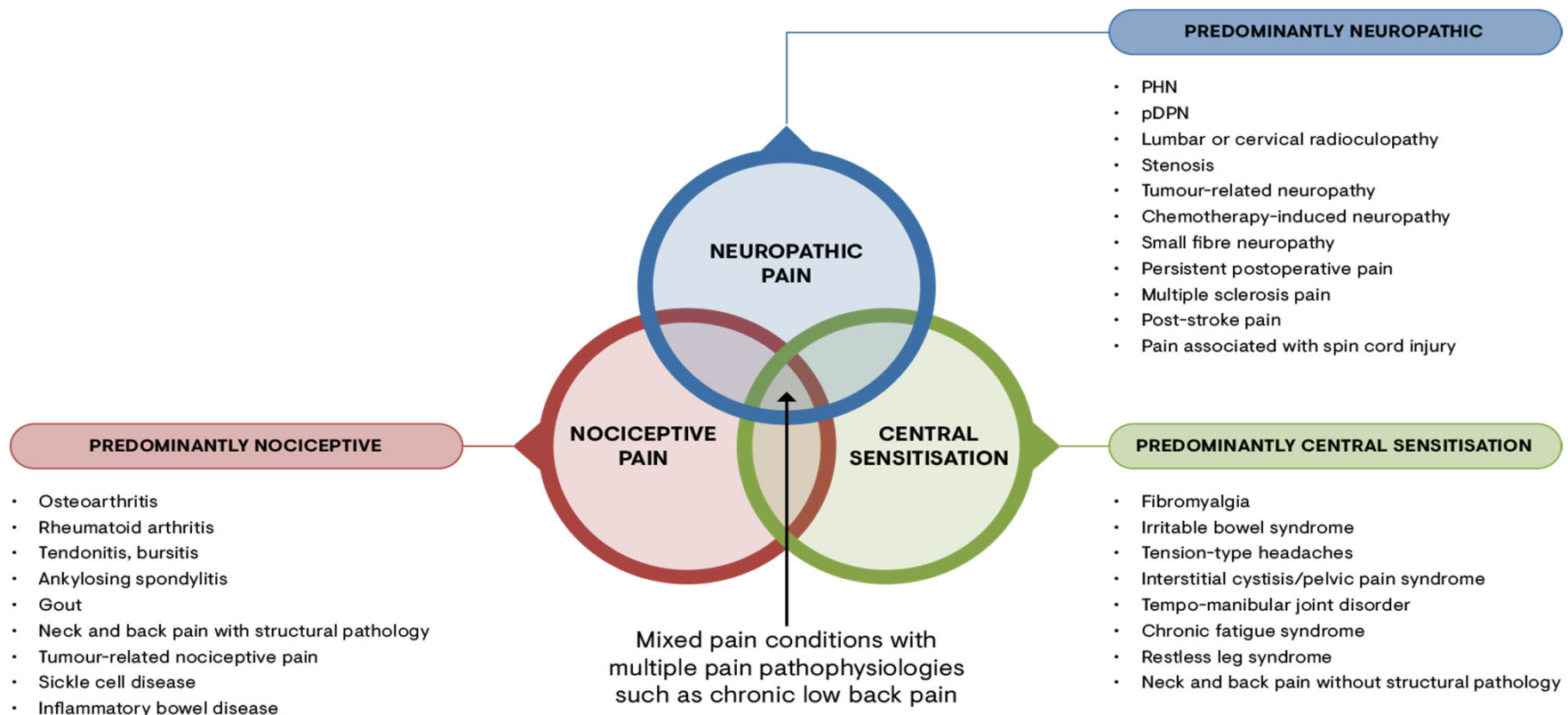
Pain related to damage of peripheral or central nerves

Pain without identifiable nerve or tissue damage thought to result from persistent neuronal dysregulation

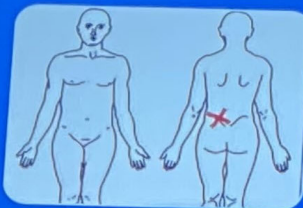
NOCICEPTIVE PAIN

NEUROPATHIC PAIN

CENTRAL SENSITISATION

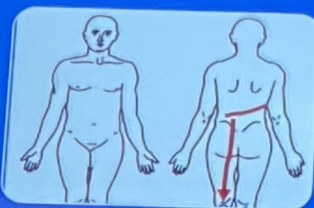


Nociplastic pain- modulated by mood or social context



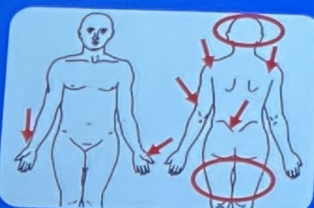
Nociceptive

- Mechanical sensitivity, repeatable, predictable
- Inflammatory or ischemic; heat may ↑ pain/sensitivity
- Often localized



Neuropathic

- Associated with injury or disease of neural tissue
- Unpredictable triggers, multiple areas sensitive; dermatomes
- Cold ↑ pain/sensitivity



Nociplastic

- Flare-ups delayed, long lasting, unpredictable
- Pain not closely tied to biomechanical context/triggers
- Pain modulated by mood or social context



Chronic pain- can be challenging to diagnose and treat.

- Pain Is complex
- Humans are Unique
- Pain experiences and injuries do not follow simple rules
- Clinical reasoning frameworks can help guide assessment and treatment
- You will see different language used when classifying a pain complaint;

AND JUST WHEN YOU THOUGHT we were done..

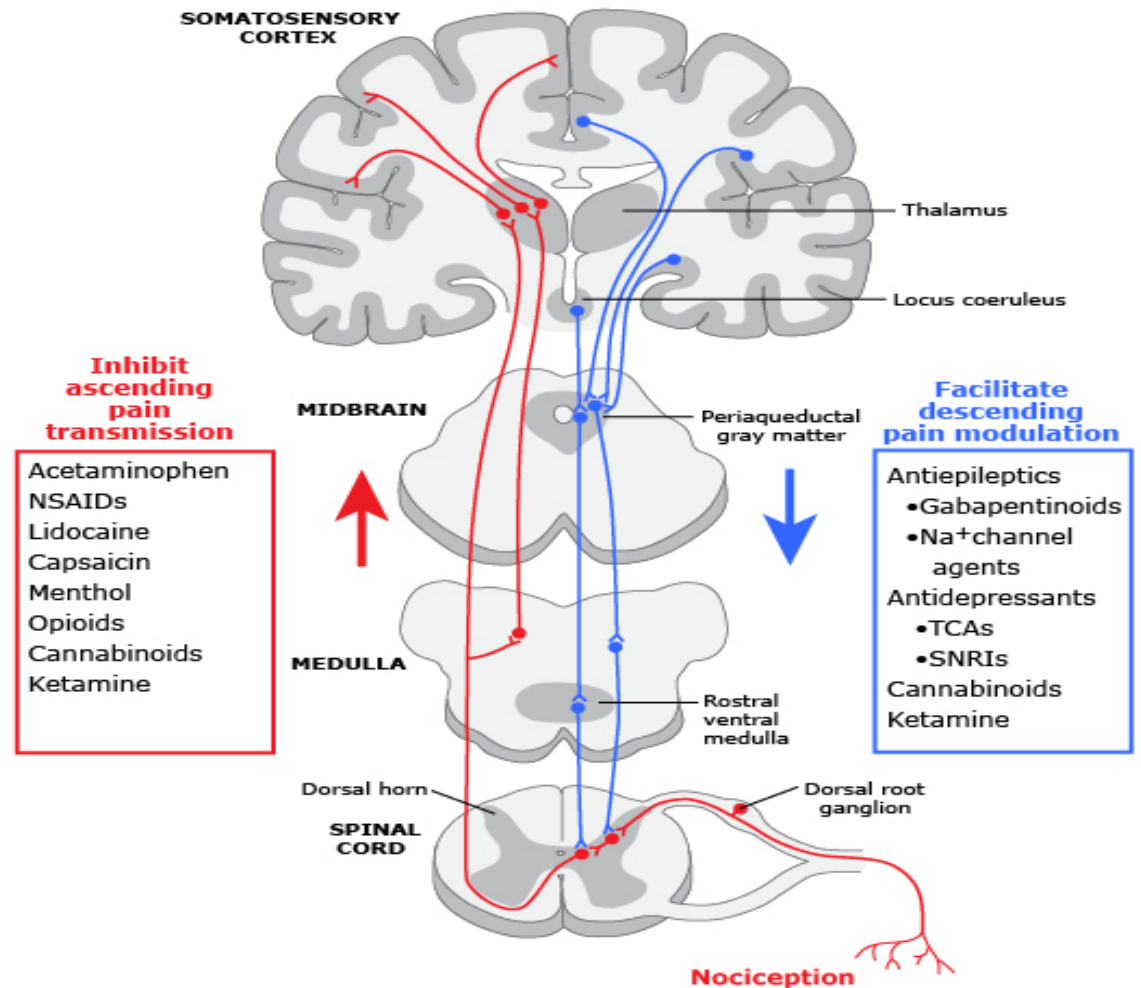
- Nociplastic pain=flare-ups are delayed, long-lasting, unpredictable.

Chronic Pain Treatments

Medications. See boxes.

Complimentary and Integrative Health therapies- mindfulness, CBT, Massage, Acupuncture, Chiropractic, etc

Interventional Procedures- Epidural, Radiofrequency ablation, spinal cord stimulation.



Screening tools help define pain type and quality of life interference to aid Treatment plan.

- Oswestry Score
- Pain Disability index
- HADS-Hospital Anxiety and Depression scale questionnaire.
- SOAPP-Screener and Opioid Assessment for Patient in Pain.

Chronic Pain in Veterans

- In the veteran population, chronic pain disproportionately affects those who have served or are serving in the military. More than 50% of all veterans enrolled and receiving care at the VHA are affected by chronic pain. This is a much higher rate of chronic pain than in the general adult population which is reported to be 26%.
- One of the largest studies of the relationship between chronic pain and suicide was an analysis of 4,863,086 patients receiving care at Veteran's Affairs facilities for clinical pain and suicidal behavior. After controlling for age, sex, and medical comorbidity, the hazard ratios for death by suicide was elevated for every pain condition except arthritis and neuropathy.
- A study that evaluated clinical cases more than 6 years showed a greater rate of completed suicide in VHA chronic pain patients relative to the general population.

Is Chronic pain a discrete transition from Acute pain?

- Much effort has been expended to treat acute pain to prevent chronic pain. Some believe this is only a small percentage of the patients complaining of chronic pain. Example: ~10% chronic pain patients had a surgical event as cause of their Chronic Pain.
- Some argue a significant percentage of those with chronic pain cannot identify what seems like an acute starting point or event.
- Acute pain is an essential function of the nervous system. It is a warning of "actual or potential tissue damage", to paraphrase the definition from the IASP.
- What is the "function" of Chronic pain?

Narcotics=Opioids

- Opioids are a class of drugs that derive from, or mimic, natural substances found in the opium poppy plant. Opioids work in the brain to produce a variety of effects, including pain relief.
- Opioid drugs include prescription pain medicine and illegal drugs. Some people use opioids because of the euphoria ("high") they can produce. Opioid drugs can cause *addiction*, also known as Opioid Use Disorder (OUD).
- Substance-Related disorders now referred to as Substance Use Disorders (SUD) focus here today is Opioids and Opioid Use Disorder (OUD).
- Opioids=all natural, semisynthetic, and synthetic forms of this agent of pain control.

Who is at risk for OUD

- Family history of Substance use. Parental Substance use.
- Favorable parental attitudes toward use behavior.
- Poor parental monitoring.
- ACEs (Adverse Childhood Experiences) traumatic events that happen between ages 1 and 17. These negative experiences affect a child's brain and health as they grow into adults. ACEs can lead to mental health or chronic health conditions. Lifelong treatment and management of ACEs help a person lead a fulfilling life. **Example Childhood sexual abuse.**
- Family rejection of sexual orientation or gender identity.
- Association with delinquent or substance-using peers.
- Lack of school connectedness. Low Academic achievement.
- **Chronic Pain** or Physical Illness.

Neurobiology of Opioid Use Disorder (OUD)

- Substance use disorders are complicated Physiologic and Psychological disorders with multiple intersecting factors, such as Drug Use Behaviors and poor judgement influenced by the pharmacodynamics and pharmacokinetic actions of the drug.
- paramount to drug dependence is the **Drug-Using Behavior**. The drug initiates a cascade of Rewarding or Aversive physical, psychologic, and social consequences increasing the likelihood of subsequent use.
- OUD development is largely based on key components of parts of the brain: Basal Ganglion, Amygdala, and Prefrontal cortex.

Fentanyl

- The most prevalent synthetic opioid today.
- Others in same category: Heroin, Morphine, and Codeine.
- Active at Mu Opioid receptor modulating pain sensation (nociception).
- These medications control pain and Induce Euphoria. Activation at the Mu receptor can cause Stress reduction, effect Memory and Mood and Motivation.
- **Opioid Use Disorder (OUD) is a chronic relapsing disease influenced by Genetics, Stress response, and prior experimentation or exposure.**
- Physical Dependence can develop between 2 and 10 days of continuous use with withdrawal symptoms occurring when stopped abruptly. Physical Dependence DOES NOT equate to OUD (alias Addiction)

U.S. Overdose Deaths Decrease in 2023, First Time Since 2018

Provisional data from CDC's National Center for Health Statistics indicate there were an estimated 107,543 drug overdose deaths in the United States during 2023—a decrease of 3% from the 111,029 deaths estimated in 2022. This is the first annual decrease in drug overdose deaths since 2018.

Deadly Combination: Opioid+Benzodiazepine

- Benzodiazepines are very commonly prescribed psychoactive drug. Used for Sedative and Anxiolytic properties. Used to treat Insomnia, Anxiety disorders, Seizure disorders and Agitation.
- FDA BlackBox Warning for Opioid in concurrent use with Benzodiazepine due to risk of CNS depression and Serious Adverse effects such as Respiratory depression and death.
- Despite this known issue FDA has noted an increasing frequency of concomitant dispensing of Opioid analgesics along with Benzodiazepine as measured by Emergency Departments visit for Overdose and Overdose Death.
- FDA states that clinicians should limit prescribing Opioid Pain Medication with Benzodiazepines or other CNS depressants. Patients should be counseled regarding possibility of death.

Naloxone

Tennessee Chronic Pain Guidelines Committee recommend that clinician(s) should incorporate into the management plan

- strategies to mitigate risk, including offering naloxone when factors that increase the risk for opioid overdose, such as history of overdose, history of substance use disorder, higher opioid dosages (greater than or equal to 50 MEDD), or concurrent benzodiazepine use, are present.

Prescribers should consider prescribing naloxone to the patient at the same time a prescription for an opioid is written.

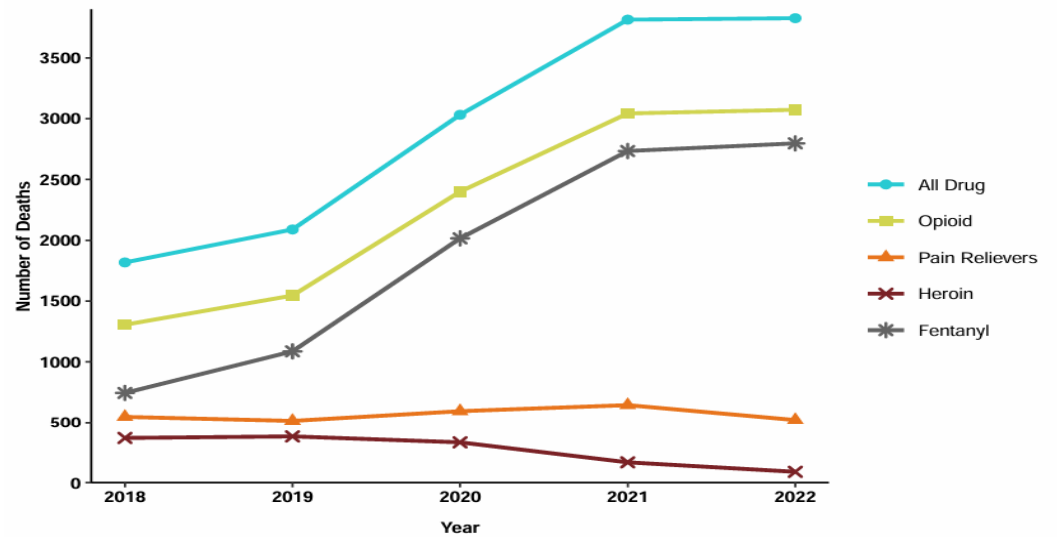
- While there are other introduction points for naloxone before an overdose, this can ensure that an at-risk patient has access to naloxone before a prescription opioid overdose can transpire.

The prescriber should provide a prescription for naloxone hydrochloride, or another drug approved by the United States Food and Drug Administration for the complete or partial reversal of an opioid overdose event to a patient at risk.

CDC data United States=107,543 Overdose deaths 2023.

2022 Tennessee Data indicates 4 time increase in deaths related to Fentanyl.

Number of Overdose Deaths by Drug Type among TN Residents, 2018-2022



Analysis by the Office of Informatics and Analytics, TDH (last updated February 7, 2024). Limited to TN residents. Data Source: TN Death Statistical File.

Number of Overdose Deaths among TN Residents by Drug Type					
Type	2018	2019	2020	2021	2022
All Drug	1,818	2,089	3,032	3,814	3,826
Opioid	1,306	1,546	2,400	3,043	3,073
Pain Relievers	548	515	595	645	522
Heroin	367	380	331	167	89
Fentanyl	745	1,087	2,016	2,734	2,797

Opioids have consistently played a role in drug overdose deaths among TN Residents and were involved in 3,073 overdose deaths* in 2022. The increase in opioid overdose deaths is primarily driven by deaths involving illicit fentanyl. Deaths involving opioids identified as pain relievers (i.e., those typically obtained through a prescription) saw a decline in 2022 after a slight increase in 2020 and 2021. Deaths involving heroin have decreased significantly since 2019.

Buprenorphine for Pain

- Suboxone is a familiar formulation of Buprenorphine and is typically used for Medication assisted therapy for Opioid Use Disorder.
- Buprenorphine has a patch and Oral formulation used for Chronic pain and is considered a safer version of pain medication as it is less likely to cause death by Respiratory Suppression and is less likely to contribute to OUD (aka Addiction).