

The Management of Acute Pain

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- No conflicts of interest.

Learning Objectives

- Defining acute pain and outlining its application to surgical care
- Summarizing the optimal use of opioids throughout the perioperative continuum
- Discussing strategic multimodal behavioral, medicinal, and interventional techniques to implement into daily practice

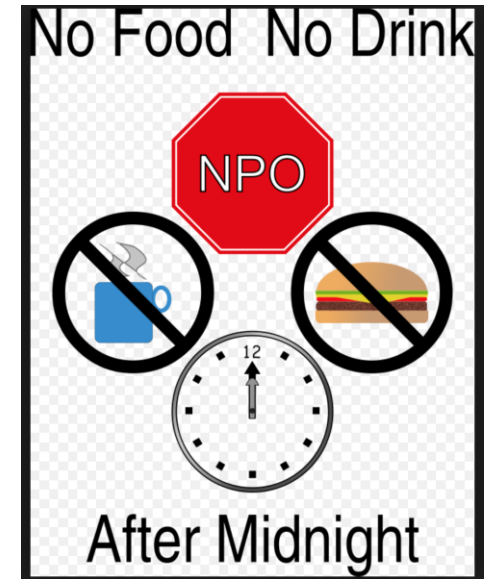
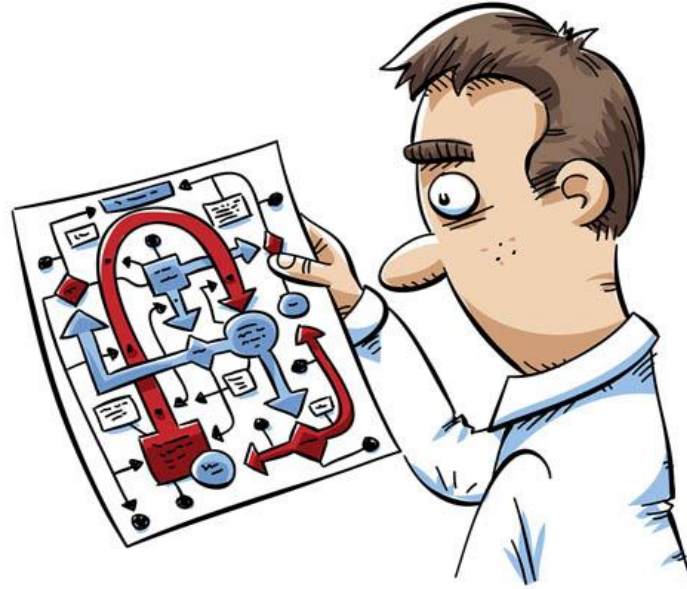
Surgery: The patient's perspective

- Apprehension
- Uncertainty
- Vulnerability



From this patient perspective, how does one define and optimize “VALUE”?

The Patient Experience

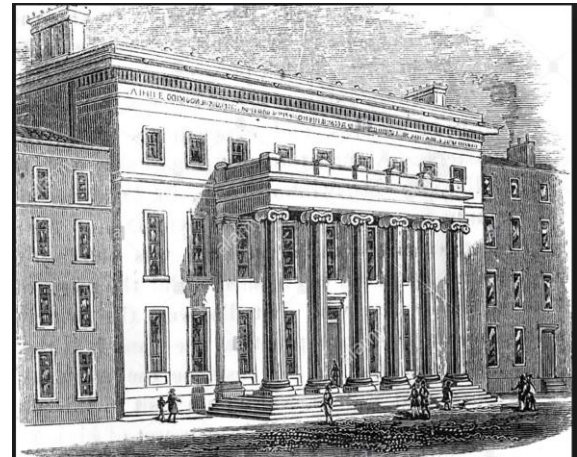


Who's got me?



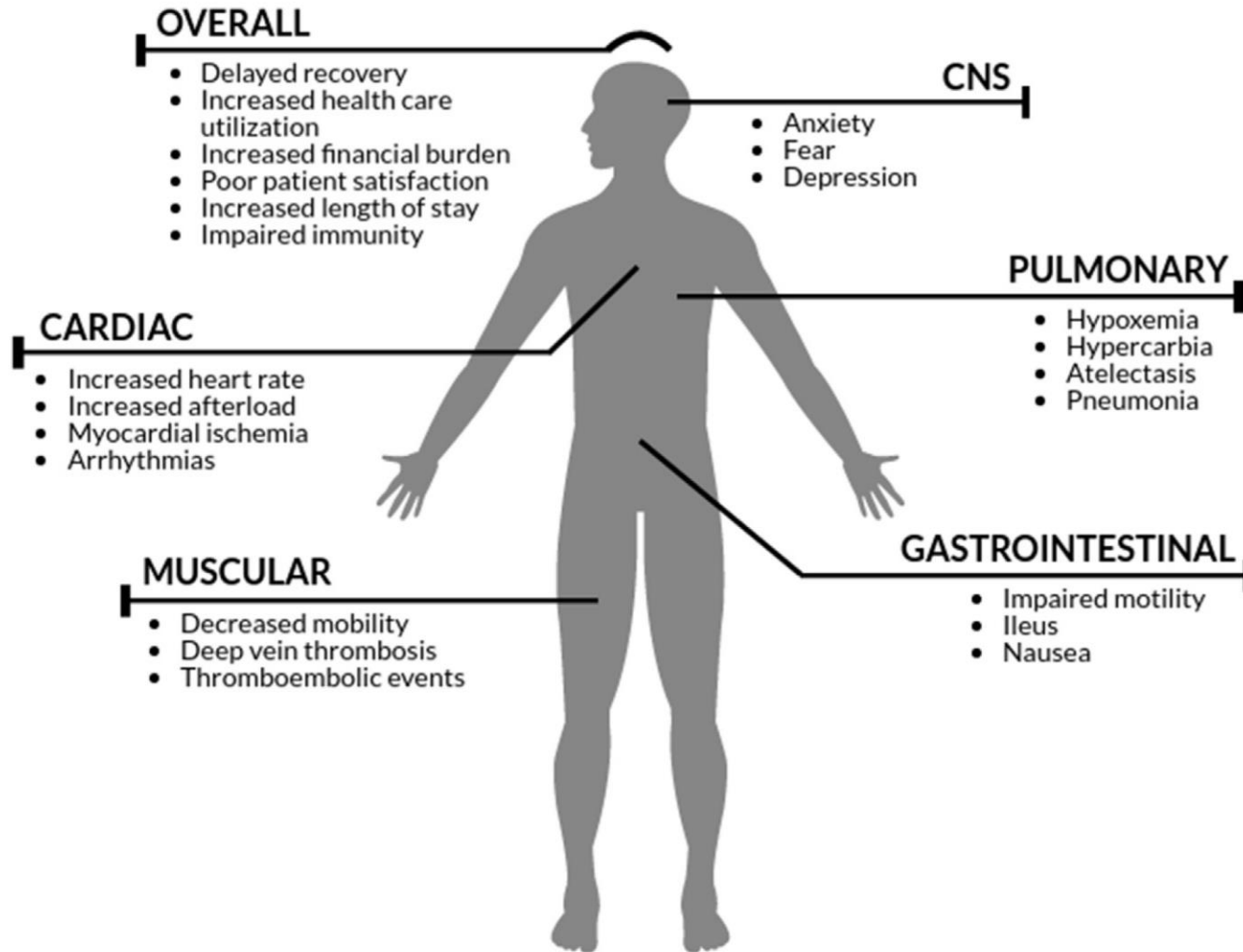
Why Should We Treat Pain?

- “Treatment of pain after surgery is central to care of postoperative patients. Failure to relieve pain is morally and ethically unacceptable”
 - Royal College of Surgeons





Biopsychosocial Effects of Pain



Pain's Purpose

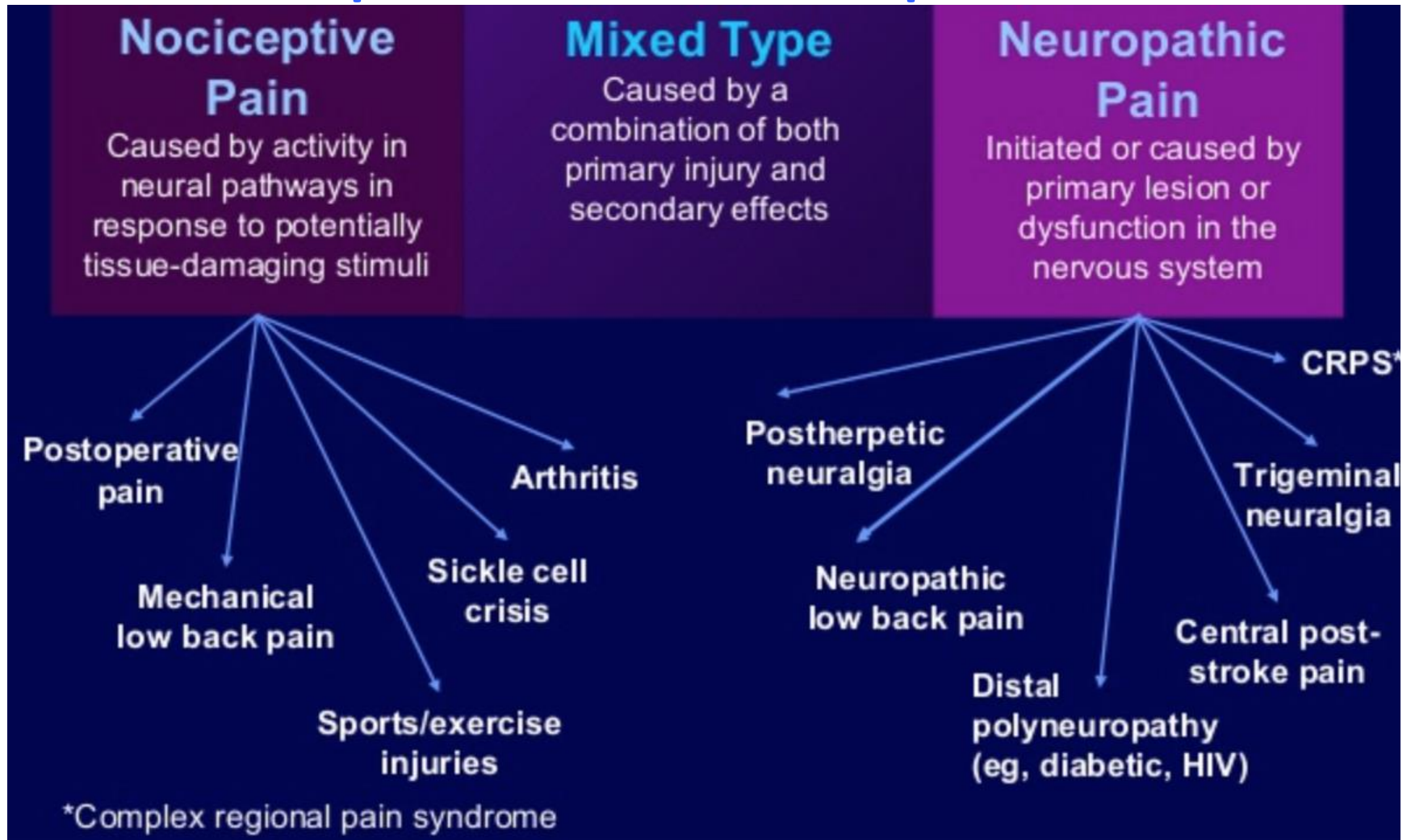
- Aristotle called pain the “passion of the soul”
- It is important to recognize the constructive functions of pain → Self-preservation
- Congenital Insensitivity To Pain
 - “Congenital Analgesia”
 - PRDM12 gene/Sodium Channelopathy
 - Increased endorphins in Brain
 - Naloxone Therapy Treatment
 - Often Die During Childhood



Defining Pain

- “Unpleasant sensory and emotional experience associated with actual or potential tissue damage”
- Most frequent cause of suffering and disability
- Acute pain is a symptom of disease or injury, whereas chronic pain is the disease itself

Nociceptive vs Neuropathic Pain



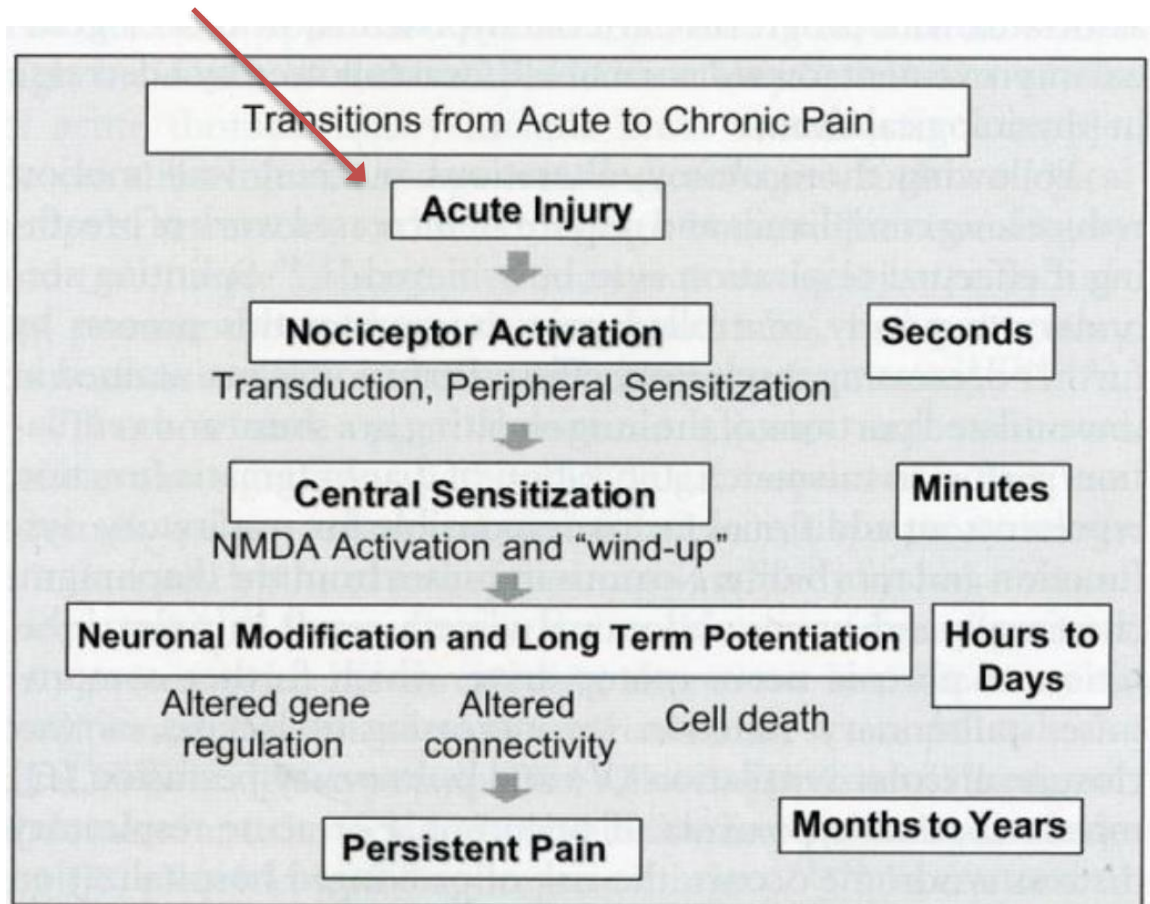
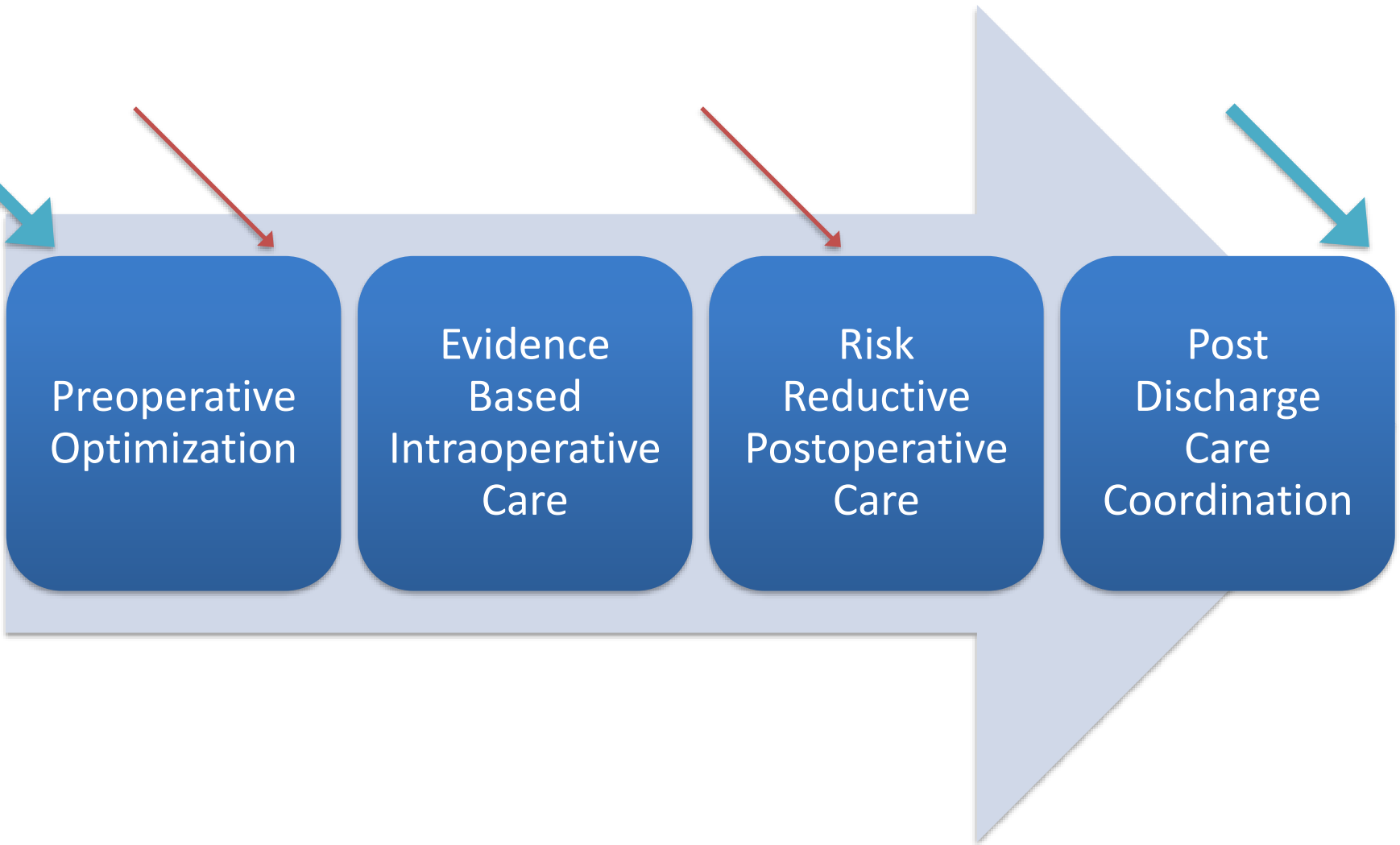


Figure 2.5: Mediators and temporal changes involved during the transition from acute to chronic pain. (Adapted from Woolf and Salter, *Science*. 2000;288:1765.)



Ideal “consult”⁷?

Transitional Pain Service Consult Criteria

- (1) Current or recent history of chronic pain diagnosis;
- (2) Previous or recent drug misuse or abuse;
- (3) Previous or recent psychological comorbidities;
- (4) Current or recent high-dose chronic opioid therapy;
- (5) Extended-release opioid, methadone, buprenorphine;
- (6) Consuming excessive amounts of postoperative opioids (> 90 mg of morphine milligram equivalents/day);
- (7) Followed by the Acute Pain Service for an extended period of time for poorly managed pain; OR
- (8) Otherwise referred by an attending surgeon

Consult/Referral to Pain Management- testing

Priority:

Class:

Referral: To dept:

Geog areas:

Indications:

Appointment time frame:

CPT Code:

Preferred Provider:

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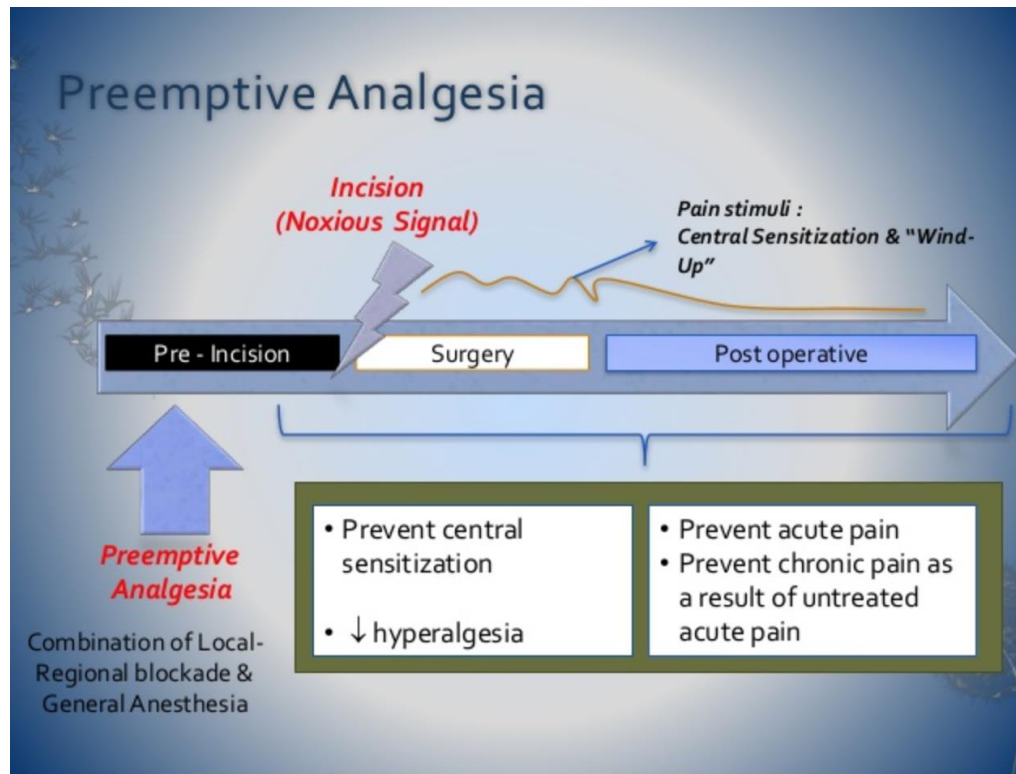
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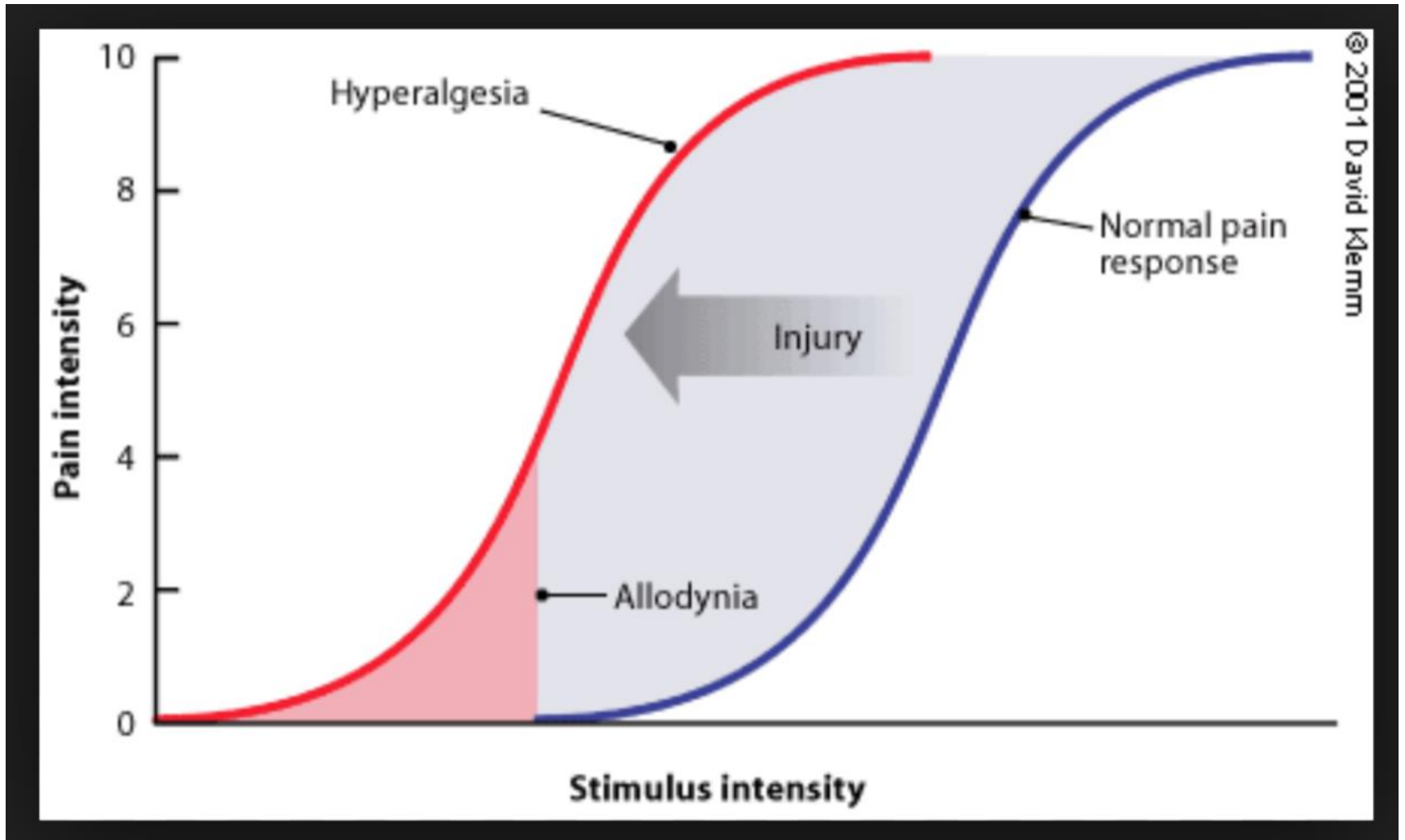
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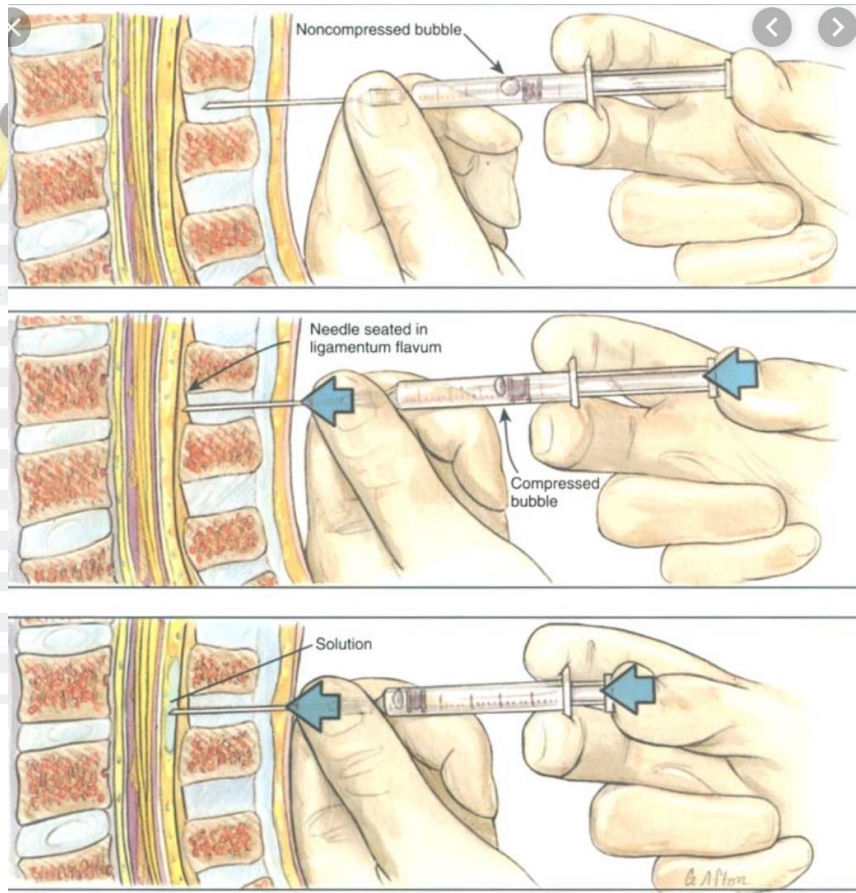
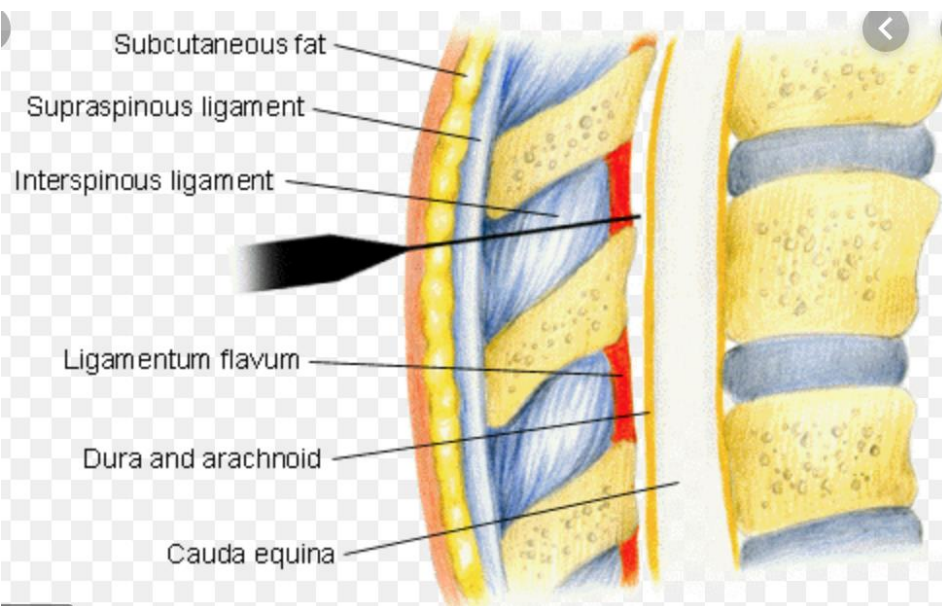
“Preemptive Analgesia”

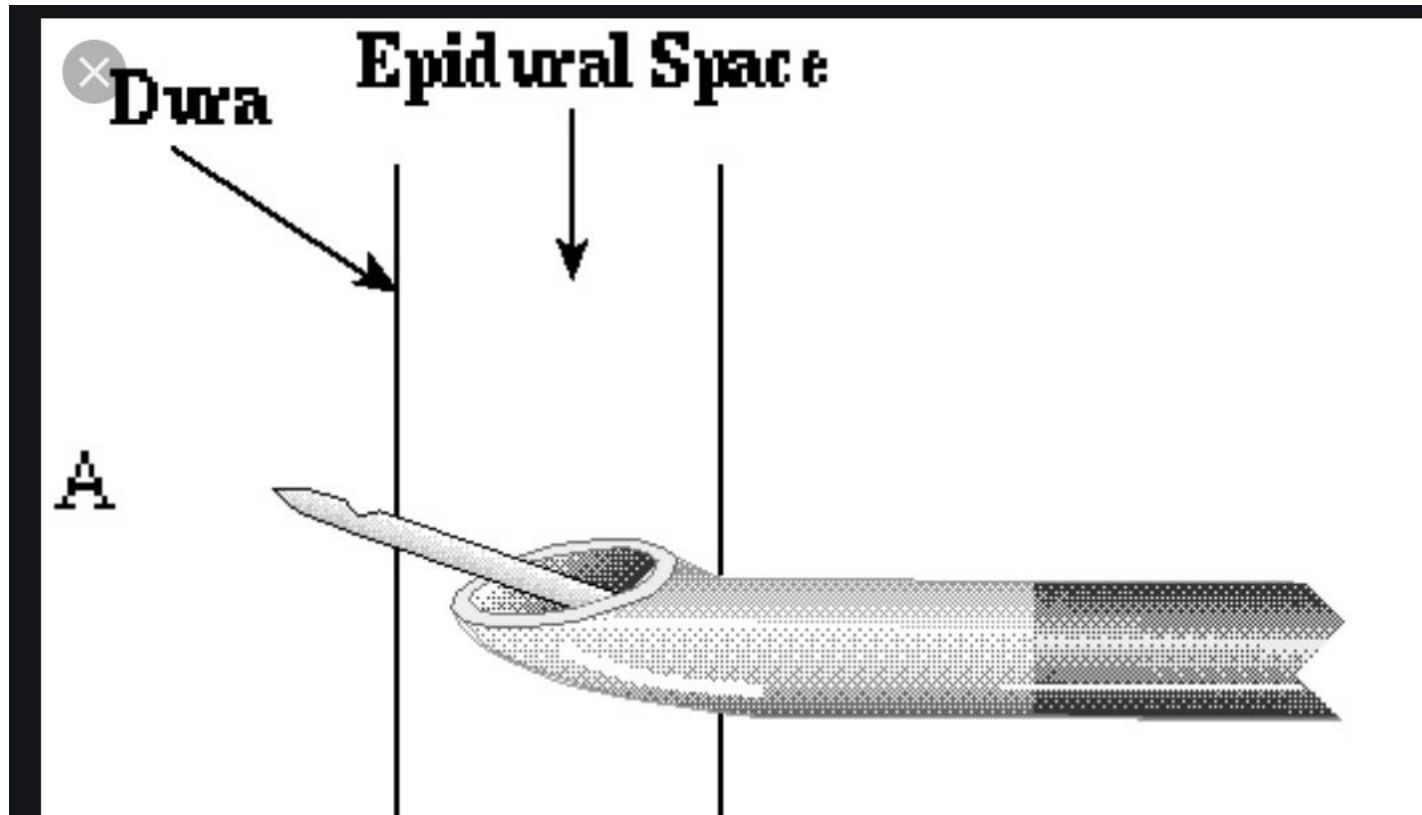
- Anti-nociceptive modality that prevents the establishment of central hyper-excitability that follows a nociceptive stimulus

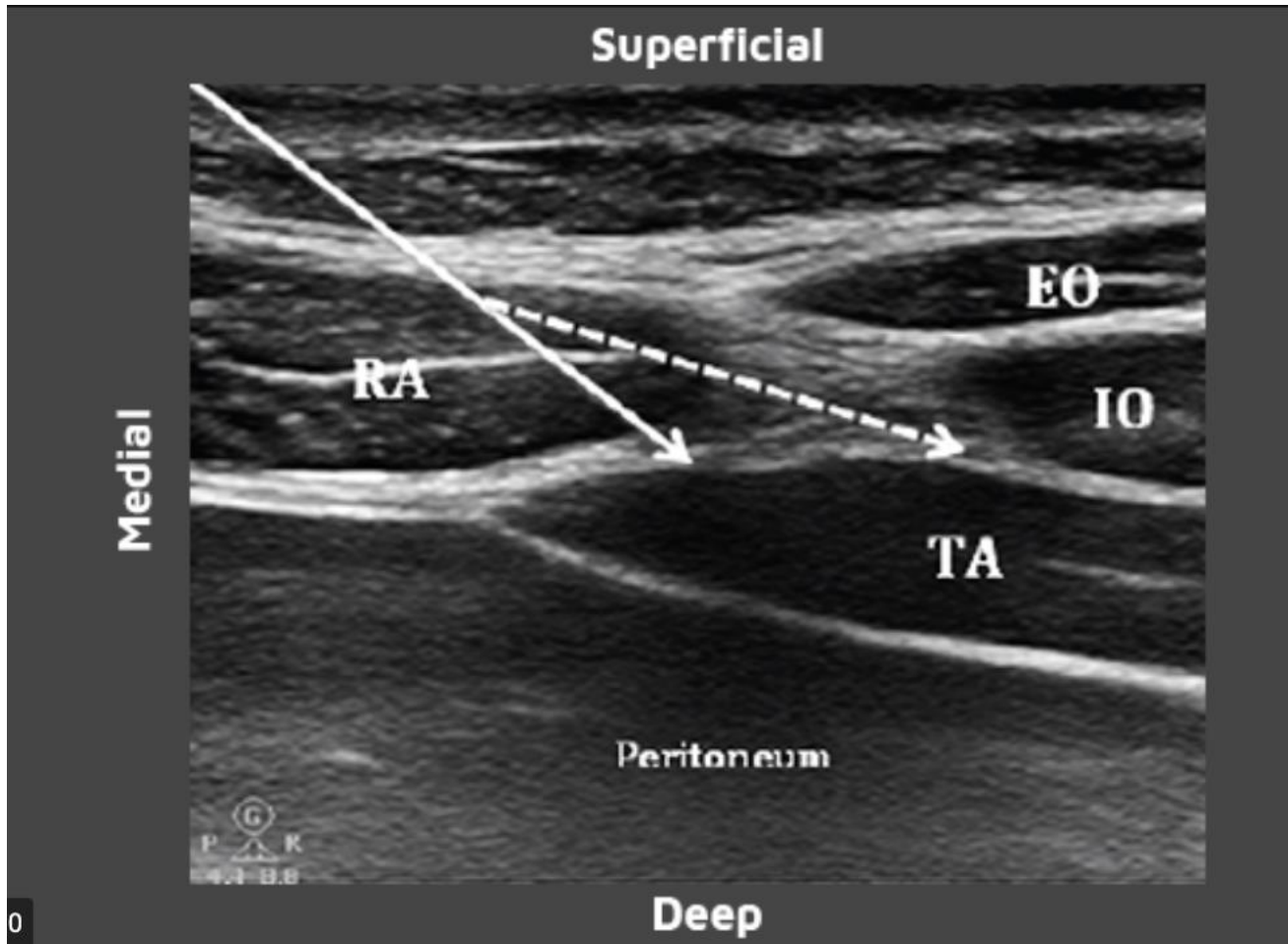


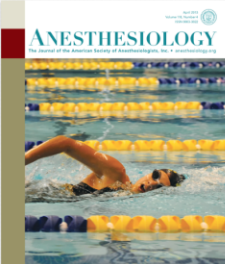


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Pain Medicine | April 2013

Pain Intensity on the First Day after Surgery: A Prospective Cohort Study Comparing 179 Surgical Procedures

Hans J. Gerbershagen, M.D., Ph.D.; Sanjay Aduckathil, M.D.; Albert J. M. van Wijck, M.D., Ph.D.; Linda M. Peelen, Ph.D.; Cor J. Kalkman, M.D., Ph.D.; Winfried Meissner, M.D., Ph.D.

Author Affiliations & Notes

Anesthesiology 04 2013, Vol.118, 934-944.
doi:10.1097/ALN.0b013e31828866b3

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Web of Science® Times Cited: 171

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- Results
- Discussion
- References

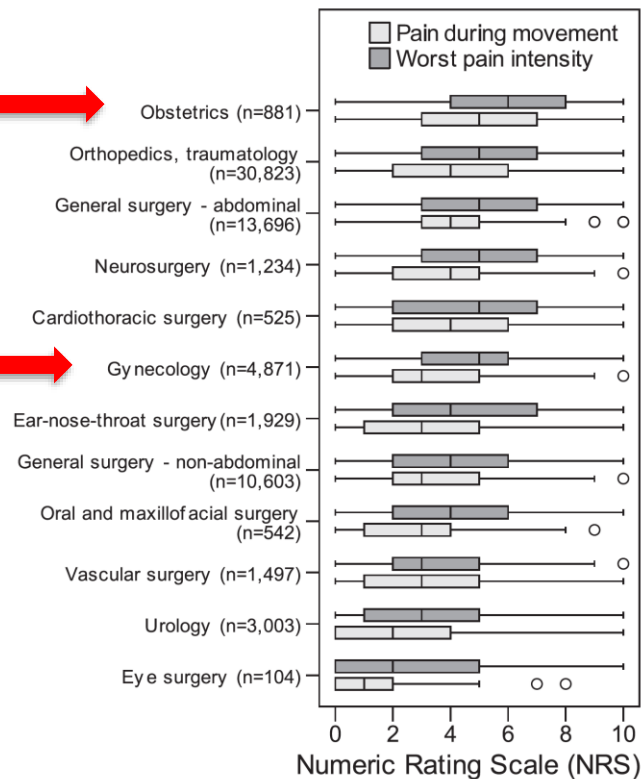
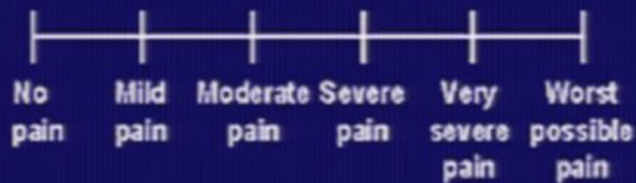


Fig. 2. Comparison of pain intensities between surgical specialties. Worst pain and pain during movement since surgery were assessed on the first postoperative day.

Pain Assessment Scales

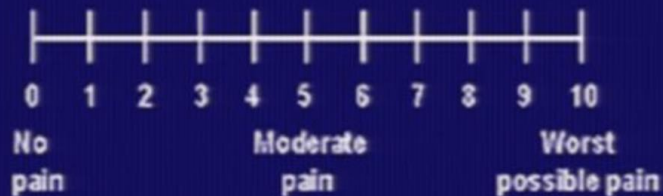
Verbal Pain Intensity Scale



Visual Analog Scale



0-10 Numeric Pain Intensity Scale

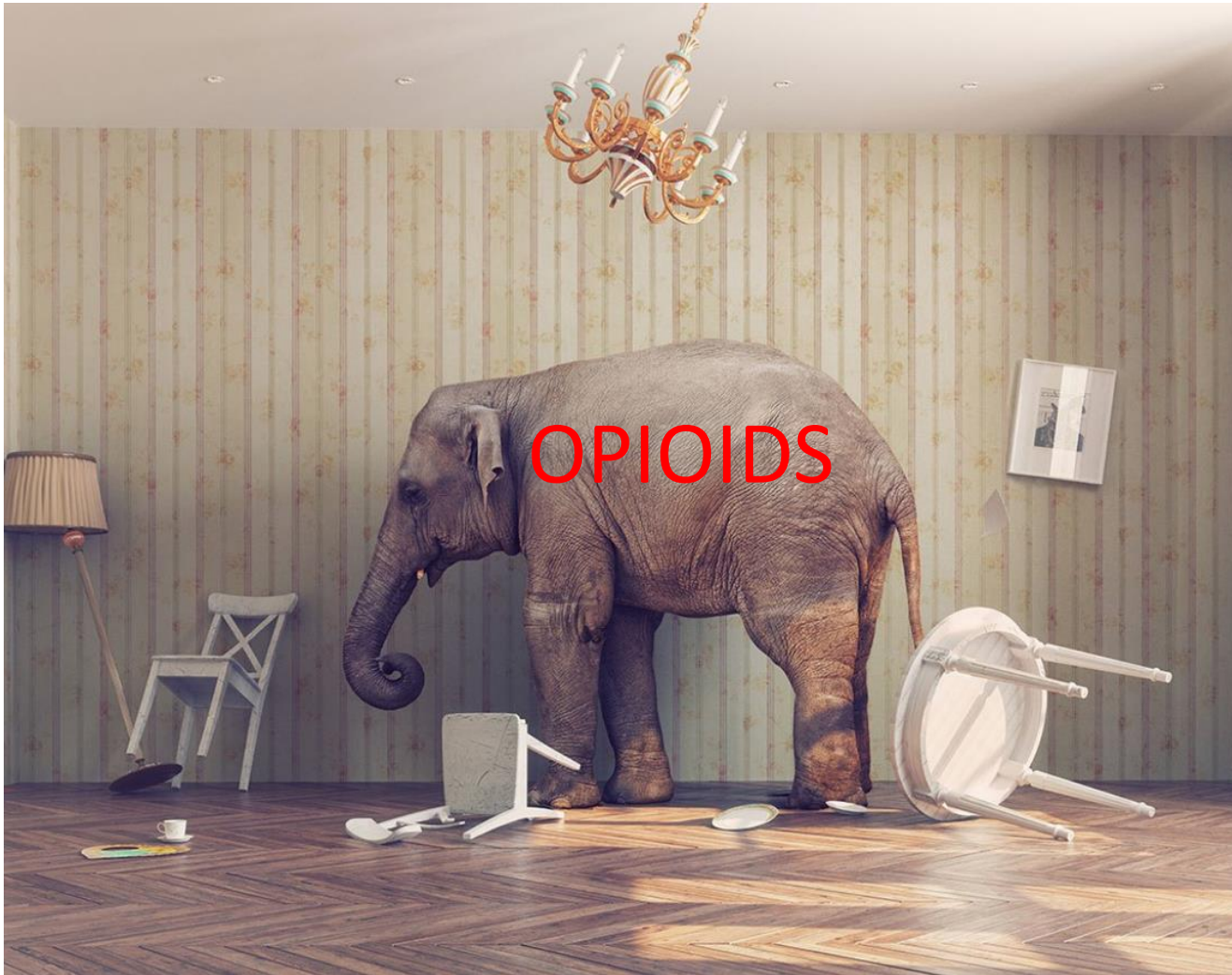


"Faces" Scale



1. Portenoy RK, Kanner RM, eds. *Pain Management: Theory and Practice*. 1996:8-10.
2. Wong DL. *Waley and Wong's Essentials of Pediatric Nursing 5th ed.* 1997:1215-1216.
3. McCaffery M, Pasero C. *Pain: Clinical Manual*. Mosby, Inc. 1999:16.

- Key Word is **FUNCTION!**
- **10/10** pain but eating, watching TV, doing Physical Therapy, sleeping VS **1/10** pain but not meeting discharge milestones, cannot move.



- Which is a greater cause of death in the United States?
- A) Traffic Related Deaths
- B) Opioids

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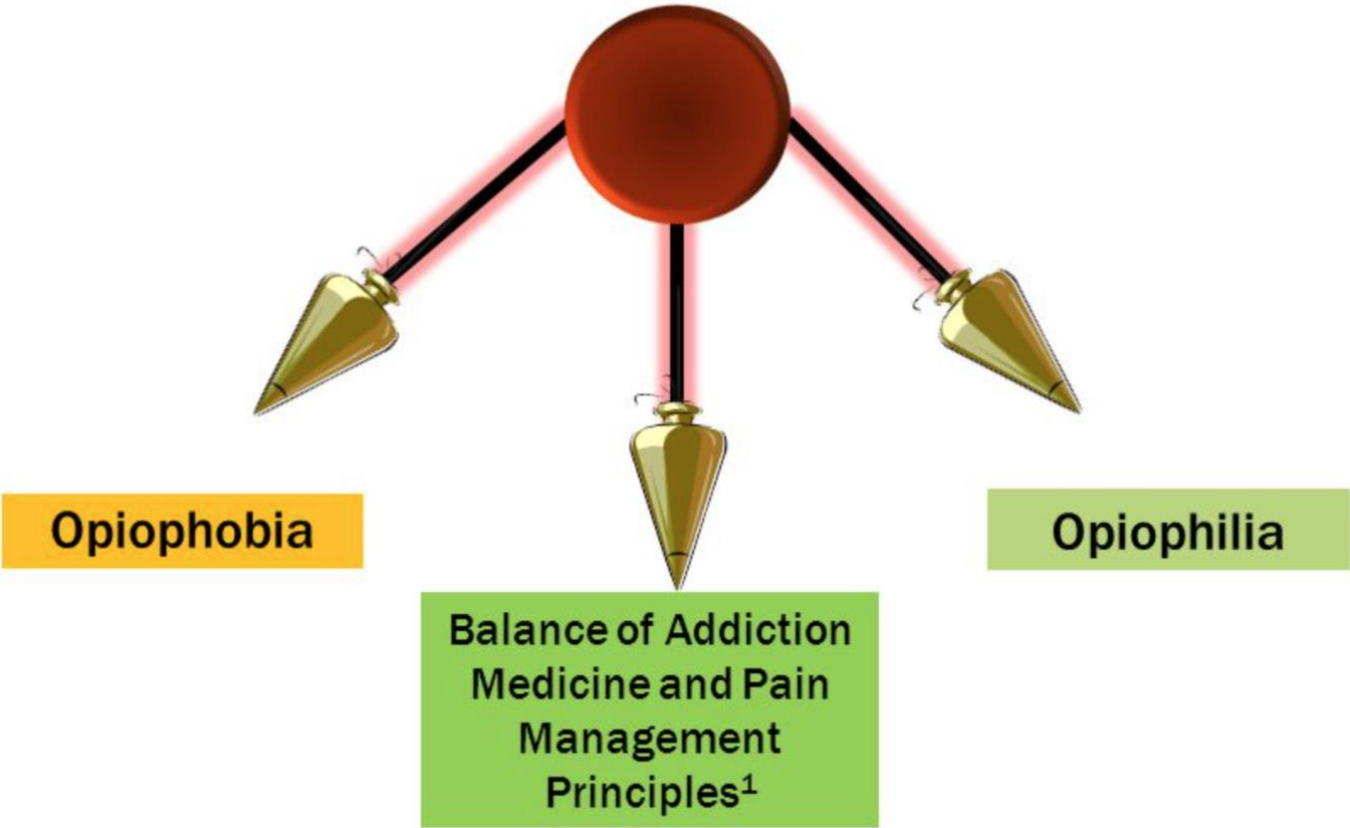
The Opioid Crisis, Already Serious, Has Intensified During Coronavirus Pandemic

Overdose deaths rise as job losses and stress from Covid-19 destabilize people struggling with addiction

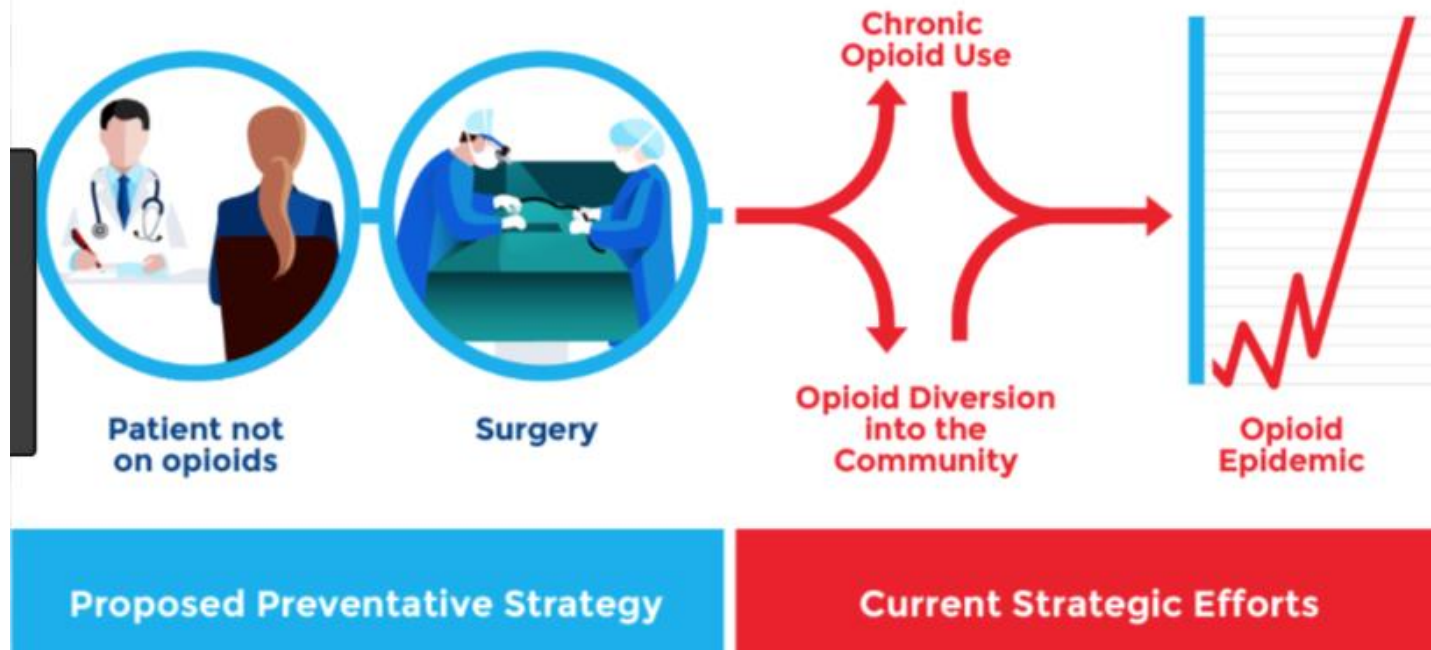


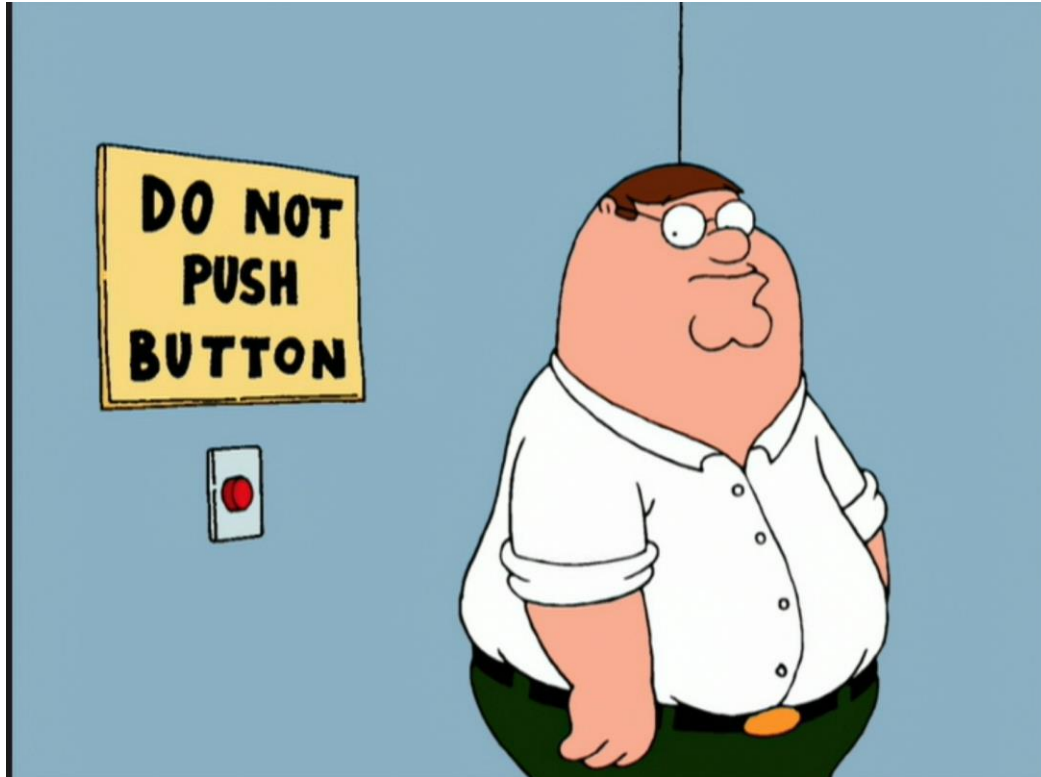
Mary Kief with a photo of her son, Benjamin Kief, who died of an opioid overdose in April while in his car in West Chester, Pa. **CREDIT:** HANNAH YOON FOR THE WALL STREET JOURNAL

The Opioid Pendulum



Preventing Chronic Opioid Use and Abuse Before it Starts





Opioid Side effects

- Tolerance
- Physical dependence
- Addiction
- Increased sensitivity to pain (hyperalgesia)
- Constipation
- Nausea, vomiting, and dry mouth
- Sleepiness and dizziness
- Confusion
- Depression
- Low testosterone/decreased libido
- Itching and sweating
- Immune Suppression/Cancer?


CDC Guidelines

“Long-term opioid use often begins with treatment of acute pain. When opioids are used for acute pain, clinicians should prescribe the lowest effective dose of immediate-release opioids and should prescribe no greater quantity than needed for the expected duration of pain severe enough to require opioids. **Three days or less will often be sufficient; more than seven days will rarely be needed**”

- CDC recommendations for prescribing opioids for chronic pain outside of active cancer, palliative, and end-of-life care



Prescription Drug Monitoring Programs: It's the Law!



STATE OF CALIFORNIA
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CURES Mandatory Consultation

As of October 2, 2018

1. A physician must check CURES and run a Patient Activity Report (PAR) the first time a Schedule II-IV controlled substance is prescribed, ordered or administered.
2. The PAR must be run within 24-hours, or the previous business day.
3. A physician must check CURES at least every 4 months if use of the controlled substance continues.

Naloxone Kits

- Providing naloxone kits to laypersons reduces overdose deaths, is safe, and is cost-effective.
- U.S. and international health organizations starting to recommend providing naloxone kits to laypersons who might witness an opioid overdose; to patients in substance use treatment programs; to persons leaving prison and jail; and as a component of responsible opioid prescribing.
- Intranasal and injectable forms.

Naloxone must be offered

Approved September 10, 2018

1. When prescribing opioids, the prescriber shall offer a prescription of naloxone to a patient if:

- *The prescription daily dose is > to 90 morphine milligram equivalents*
- *An opioid is prescribed with a benzodiazepine*
- *The patient has an increased risk for overdose*

2. When prescribing opioids, the prescriber shall provide education on overdose prevention and the use of naloxone to the following individuals:

- *Patient*
- *One or more persons designated by the patient*

- **Opioid Tolerance:**

- For at least 1 week patient has been receiving oral morphine 60 mg/day; *transdermal fentanyl 25 mcg/hour*; *oral oxycodone 30 mg/day*; *oral hydromorphone 8 mg/day*; *oral oxymorphone 25 mg/day*; or an *equianalgesic dose of any other opioid*.

- **Acute on Chronic Needs:**

- Goal should be to not utilize > 30-100 % of total daily Oral Morphine Equivalents

Equianalgesic Opioid Dosing

Drug	Equianalgesic Doses (mg)	
	Parenteral	Oral
Morphine	10	30
Buprenorphine	0.3	0.4 (sl)
Codeine	100	200
Fentanyl	0.1	NA
Hydrocodone	NA	30
Hydromorphone	1.5	7.5
Meperidine	100	300
Oxycodone	10*	20
Oxymorphone	1	10
Tramadol	100*	120

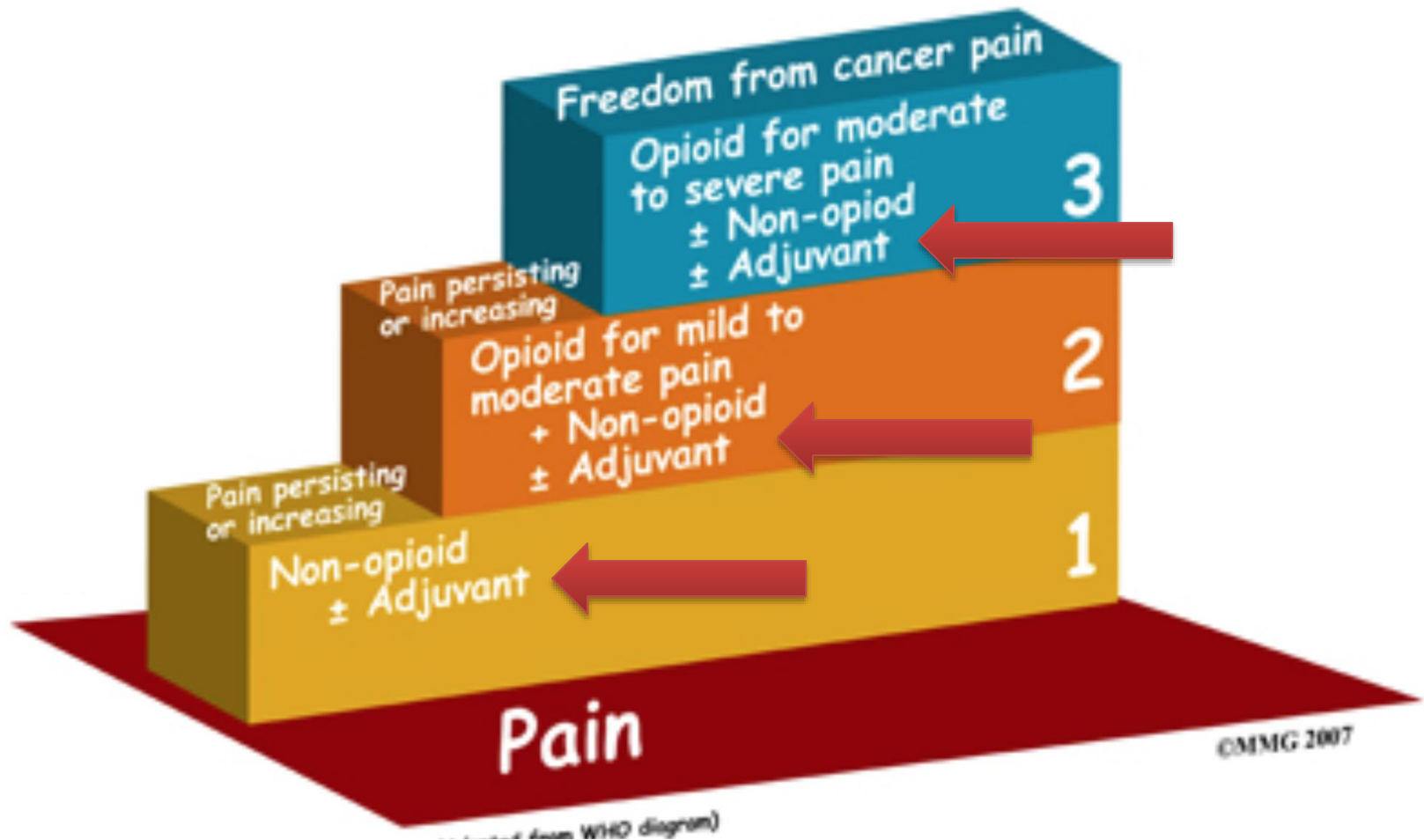
*Not available
in the US

McPherson ML. *Demystifying Opioid Conversion Calculations: A Guide For Effective Dosing*. Amer Soc of Health-Systems Pharm, Bethesda, MD, 2010. Copyright ASHP, 2010. Used with permission.

NOTE: Learner is STRONGLY encouraged to access original work to review all caveats and explanations pertaining to this chart.

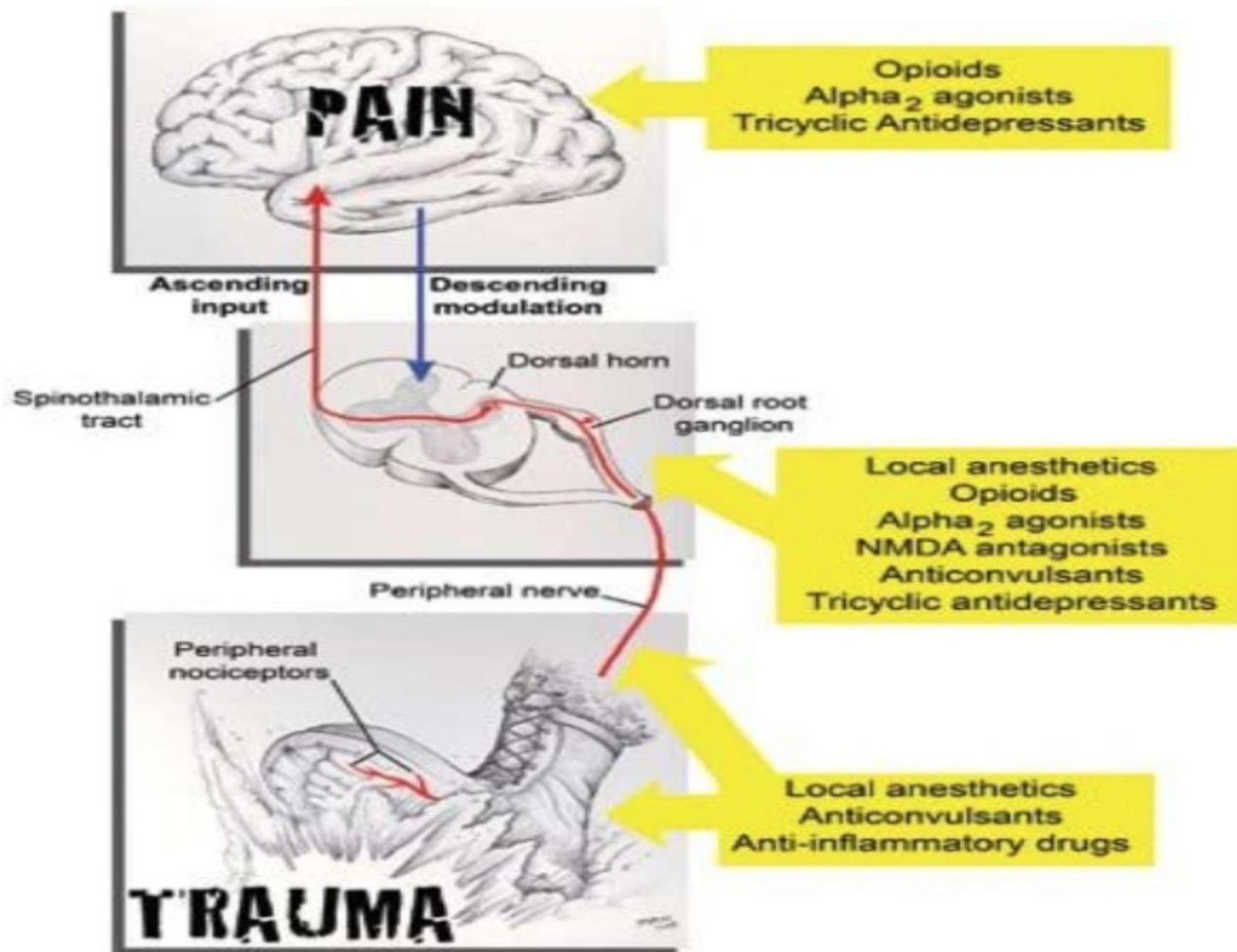
Incomplete Cross Tolerance

WHO Three-Step Analgesic Ladder



Multimodal Pain Management





Adjunctive Medications

- Membrane Stabilizers
 - Gabapentin (Neurontin)
 - Pregabalin (Lyrica)
- Muscle Relaxants
 - Baclofen
 - Tizanidine (Zanaflex)
 - Cyclobenzaprine (Flexeril)
 - Methocarbamol (Robaxin)
 - Diazepam (Valium)

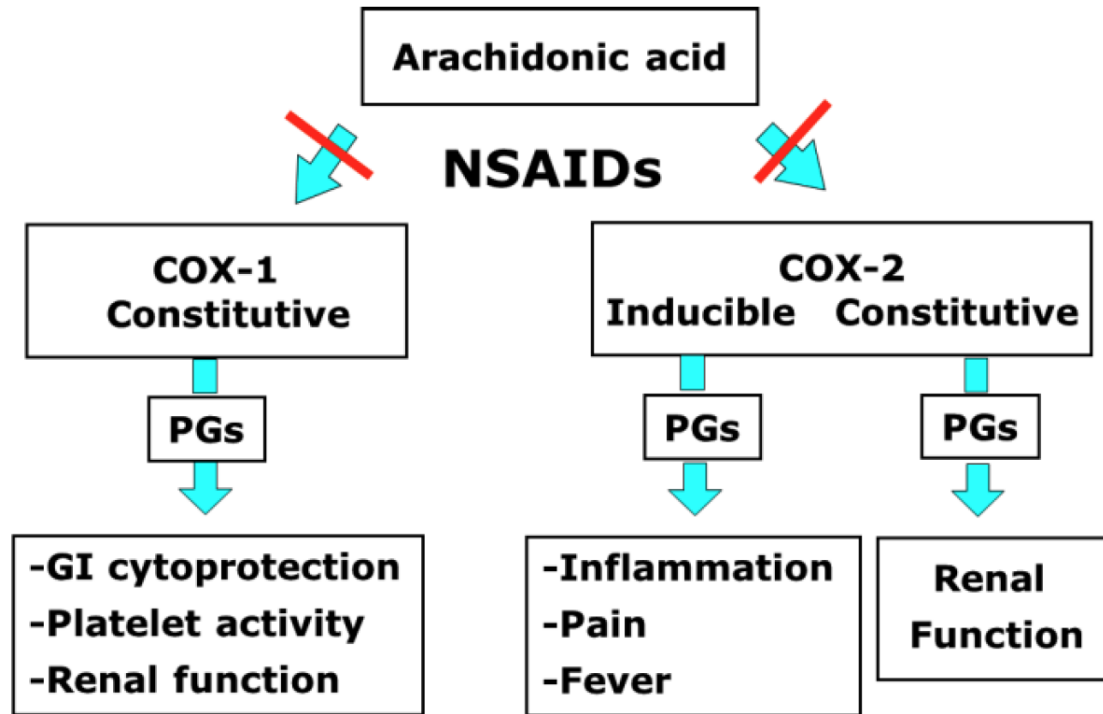
Adjunctive Medications

- Antidepressants
 - TCA class (amitriptyline, nortriptyline)
 - SNRI (duloxetine)
- Benzodiazepines
 - Valium (Diazepam)
 - Lorazepam (Ativan)
 - Clonazepam (Klonopin)

Adjunctive Medications

- Topicals
 - Lidoderm Patch/Cream
 - Diclofenac Gel/Patch
 - Capsaicin
 - CBD Oil
- Other Modalities
 - Ketamine
 - Dexmedetomidine (Precedex)
 - Acetaminophen (Tylenol)
 - Steroids?

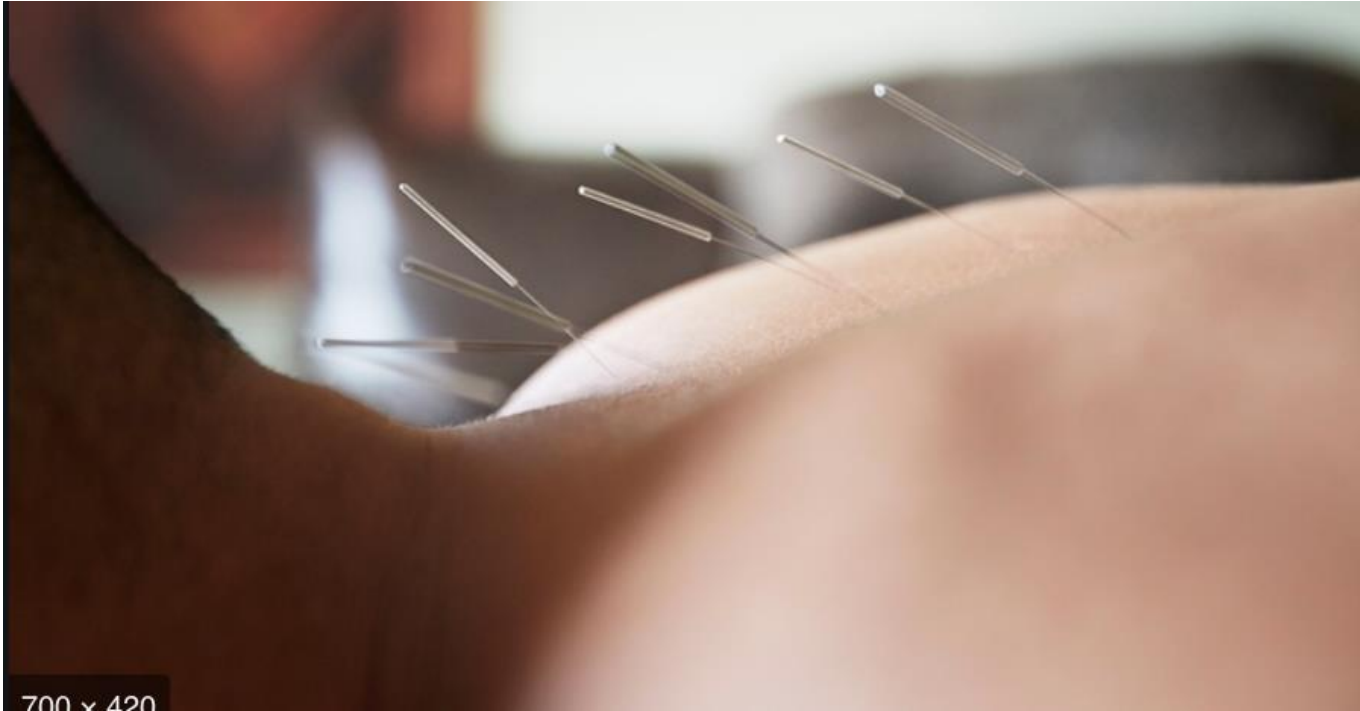
Cyclooxygenase Inhibitors



Source: Adapted from: Loeser JD, ed. *Bonica's Management of Pain*. 3rd ed; Philadelphia, Pa: Lippincott Williams & Wilkins; 2001:1667.

Virtual Reality





Preoperative Optimization	Intraoperative Management	Postoperative and Transitional Management
Optimize adverse patient factors Medication use, opioids, anticoagulants Anxiety, depression, catastrophizing Poor physical functional status	Choice of technique Regional, general, combined One-shot vs. continuous neural blockade	Regional techniques Catheter management Home infusions
Patient education Anesthetic and analgesic options Outline postoperative transition plan Expectations surrounding pain relief Expectations surrounding rehabilitation	Opioid dependent patients Maintenance requirements Supplemental opioids Buprenorphine	Adjuvant medications Opioid management IV to PO conversions Complex dosing for dependent patients Management of buprenorphine
Preemptive/preventative strategies	Adjuvant techniques Ketamine Dexmedetomidine	Contact with primary provider Follow-up in pain clinic

