



Responsibilities and Requirements of Prescribing Schedule II Opioid Drugs

Arthur A. Dugoni School of Dentistry, University of the Pacific
Andrew Young DDS, MSD



Disclosure

I have no financial
arrangements and relationships
with sponsors and commercial
supporters

Course Objectives

- Practices for Pain Management in Dentistry
- Regulatory Requirements for Prescribers and Dispensers
- Dental Office Procedures for Managing Vulnerable or Substance Use Disorder Patients

Outline

- Understanding Opioids and Diversion
 - Opioids
 - Tolerance, Dependence, Addiction, Withdrawal
 - Diversion
- Regulatory Requirements for Prescribers and Dispensers
 - Preventing Diversion (Roles)
 - Regulations
 - CURES
 - Pharmacists
- Practices for Pain Management in Dentistry
- Understanding Pain
 - **PAIN** Prevention Paradigm
 - Prevention
 - Anti-inflammatories
 - Individualize
 - Narcotics
- Dental Office Procedures for Managing Vulnerable or Substance Use Disorder Patients
 - Dentist's role in preventing diversion
 - Vulnerable Patients
 - Responding to Overdose
 - Treatment for Addiction

SOURCES

Sources

Drug Enforcement Administration Pharmacist's Manual

Timothy J. Shea
Acting Administrator
Drug Enforcement Administration

William T. McDermott
Assistant Administrator
Diversion Control Division

Loren T. Miller
Chief, Policy Section

This Pharmacist's Manual has been prepared by the Drug Enforcement Administration, Diversion Control Division, as a guide to assist pharmacists in their understanding of the Federal Controlled Substances Act and its implementing regulations as they pertain to the pharmacy profession.


The 2020 edition replaces all previous editions of the Pharmacist's Manual issued by the Drug Enforcement Administration, both hard copy and electronic.

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Sources

← → ↻ [https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=HSC&division=10.&title=&part=&chapter=4.&article=1.#:~:text=\(a\)%20Exc](https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=HSC&division=10.&title=&part=&chapter=4.&article=1.#:~:text=(a)%20Exc) 📄 📱 ⭐ ⚙️

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HEALTH AND SAFETY CODE - HSC
DIVISION 10. UNIFORM CONTROLLED SUBSTANCES ACT [11000 - 11651] (*Division 10 repealed and added by Stats. 1972, Ch. 1407.*)
CHAPTER 4. Prescriptions [11150 - 11209] (*Chapter 4 added by Stats. 1972, Ch. 1407.*)

ARTICLE 1. Requirements of Prescriptions [11150 - 11180] (*Article 1 added by Stats. 1972, Ch. 1407.*)

11150. No person other than a physician, dentist, podiatrist, or veterinarian, or naturopathic doctor acting pursuant to Section 3640.7 of the Business and Professions Code, or pharmacist acting within the scope of a project authorized under Article 1 (commencing with Section 128125) of Chapter 3 of Part 3 of Division 107 or within the scope of Section 4052.1, 4052.2, or 4052.6 of the Business and Professions Code, a registered nurse acting within the scope of a project authorized under Article 1 (commencing with Section 128125) of Chapter 3 of Part 3 of Division 107, a certified nurse-midwife acting within the scope of Section 2746.51 of the Business and Professions Code, a nurse practitioner acting within the scope of Section 2836.1 of the Business and Professions Code, a physician assistant acting within the scope of a project authorized under Article 1 (commencing with Section 128125)

Sources

The image shows a PDF viewer interface. The top bar displays 'New Laws 2021', '1 / 31', '100%', and navigation icons. The left sidebar contains a table of contents with three items, the first of which is highlighted with a blue border and labeled '1'. The main content area on the right displays the text of the first item.

Statutory Changes in Pharmacy Law
Unless otherwise noted, the provisions take effect January 1, 2021

Business and Professions Code Changes

Section 4001 of the Business and Professions Code is amended to read:

(a) There is in the Department of Consumer Affairs a California State Board of Pharmacy in which the administration and enforcement of this chapter is vested. The board consists of 13 members.

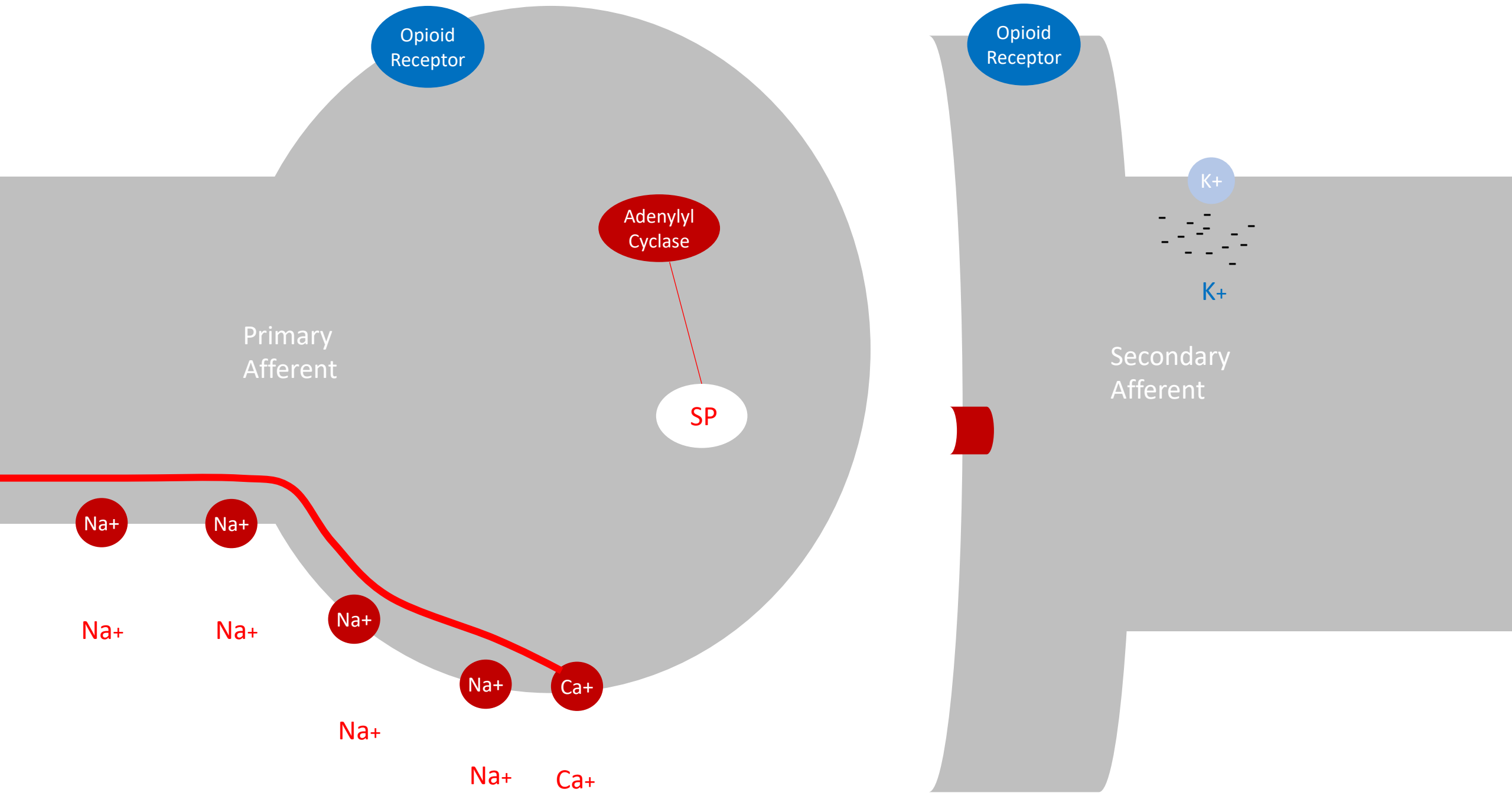
(b) The Governor shall appoint seven competent pharmacists who reside in different parts of the state to serve as members of the board. The Governor shall appoint four public members, and the Senate Committee on Rules and the Speaker of the Assembly shall each appoint a public member who shall not be a licensee of the board, any other board under this division, or any board referred to in Section 1000 or 3600.

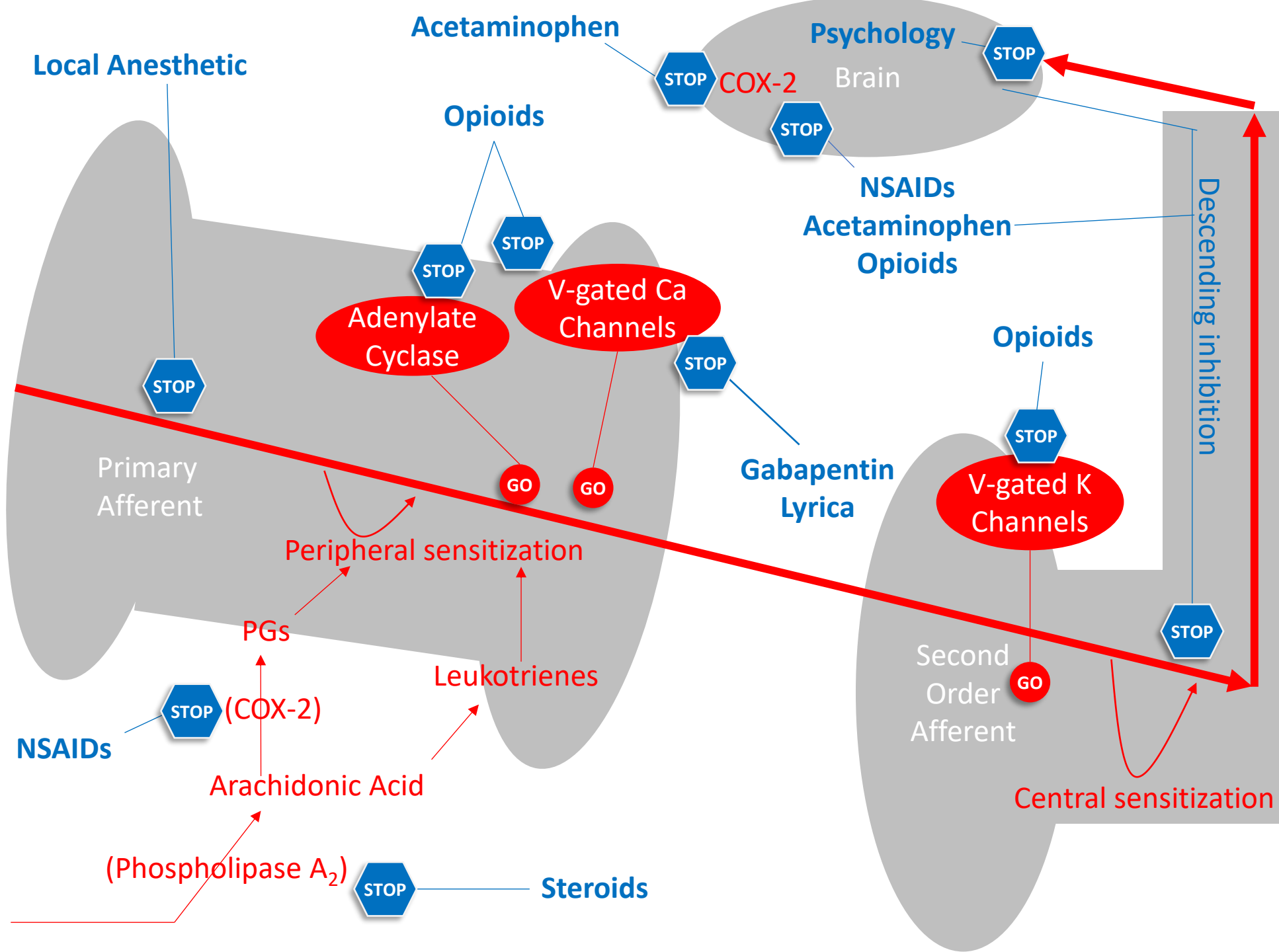
(c) At least five of the seven pharmacist appointees to the board shall be pharmacists who are actively engaged in the practice of pharmacy. Additionally, the membership of the board shall include at least one pharmacist representative from each of the following practice settings: an acute care hospital, an independent community pharmacy, a chain community pharmacy, and a long-term health care or skilled nursing facility. The pharmacist appointees shall also include a pharmacist

Understanding Opioids and Diversion

OPIODIDS

Normal Pain Transmission (continuous animation)





Definitions

- **Narcotics**

- Originally, any substance that dulled the senses and relieved pain
- Some use the term to refer to all illegal drugs
- “Opioid” is now the preferred term to avoid confusion

- **Opioids**

- Legal or illegal chemicals that **interact with opioid receptors** on nerves in the body and brain, and reduce pain
- **Natural opioid analgesics**, including morphine and codeine;
- **Semi-synthetic opioid analgesics**, including oxycodone, hydrocodone, hydromorphone, and oxymorphone
- **Methadone**, a synthetic opioid for pain reduction or for use in MAT for opioid use disorder (OUD)
- **Synthetic opioid analgesics** other than methadone, including tramadol and fentanyl

TOLERANCE,
DEPENDENCE,
ADDICTION*,
WITHDRAWAL

*Substance Use Disorder (SUD)



Opioids Stand Out

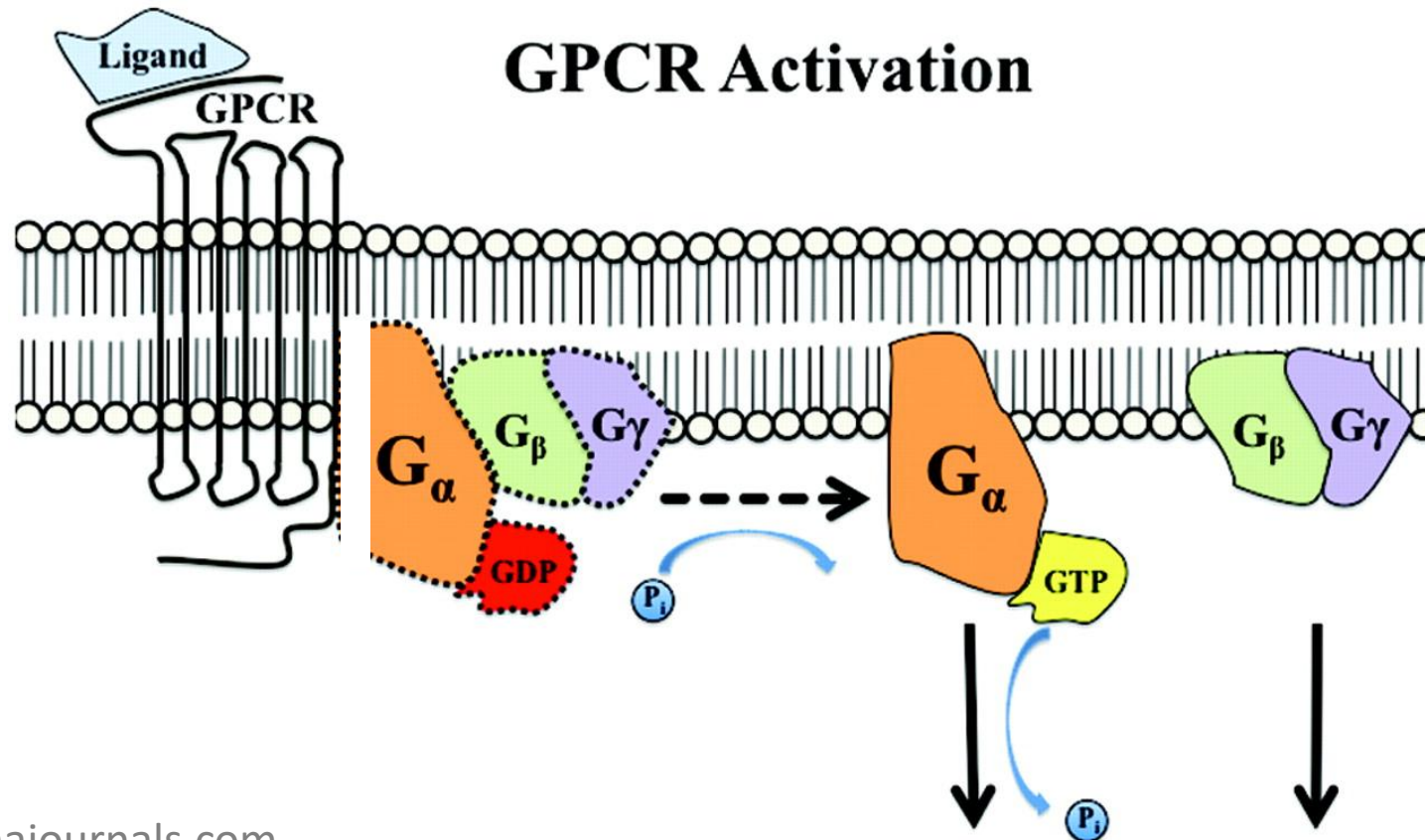
More prone to

- Tolerance
- Dependence

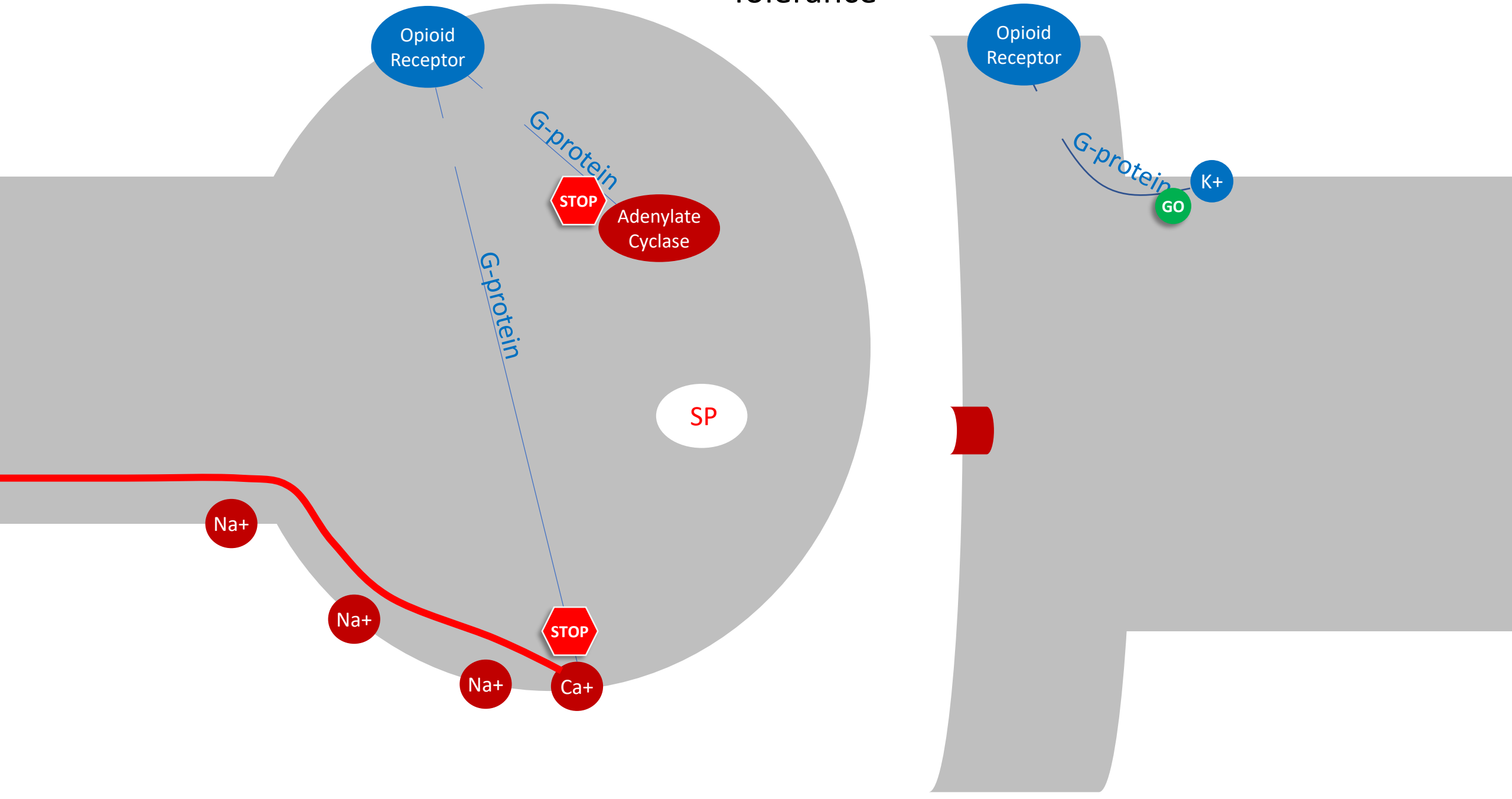
than any other drug class

Tolerance

- Mainly by uncoupling of G-protein from opioid receptor

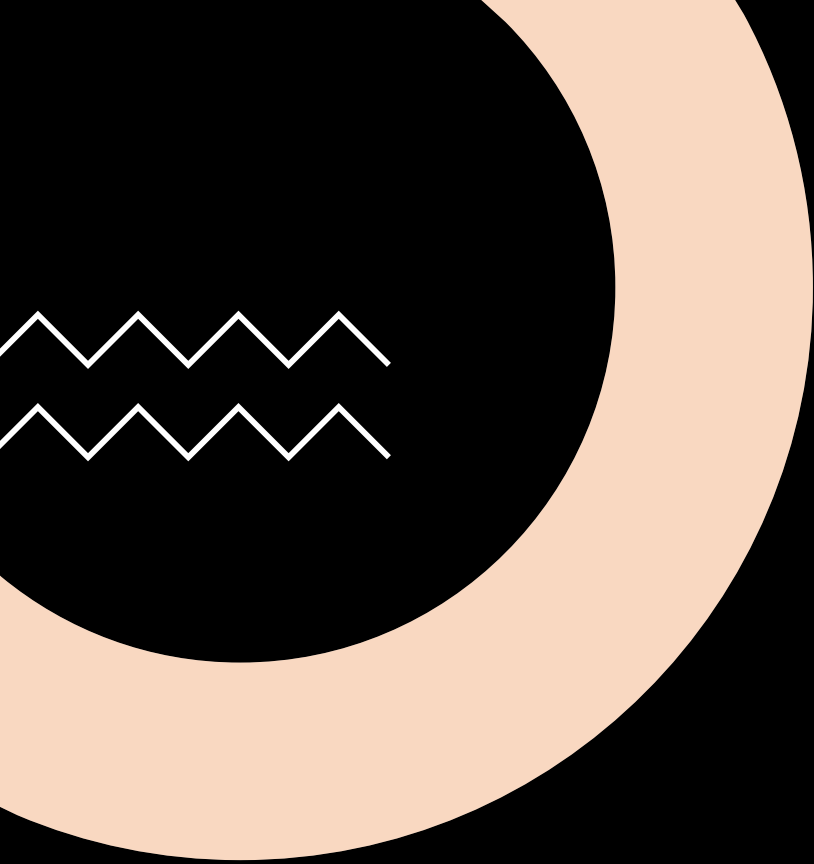


Tolerance



Tolerance Definition

- Patients **already taking** (for **1 week or more, round-the-clock**) either
 - 60 mg oral morphine (or hydrocodone) daily
 - 30 mg oral oxycodone daily
 - 25 mcg transdermal fentanyl per hour
 - 25 mg oral oxymorphone daily
 - 8 mg oral hydromorphone daily
 - or equivalent dose of another opioid



“A drug-induced state in which, upon cessation of the drug, physical and/or psychological withdrawal symptoms occur.”

Dependence



Dependence

Can develop to some degree after 1 week of regular use

- May require tapering discontinuation



The High

Increased ability and desire to **socialize**

Feelings of **euphoria**

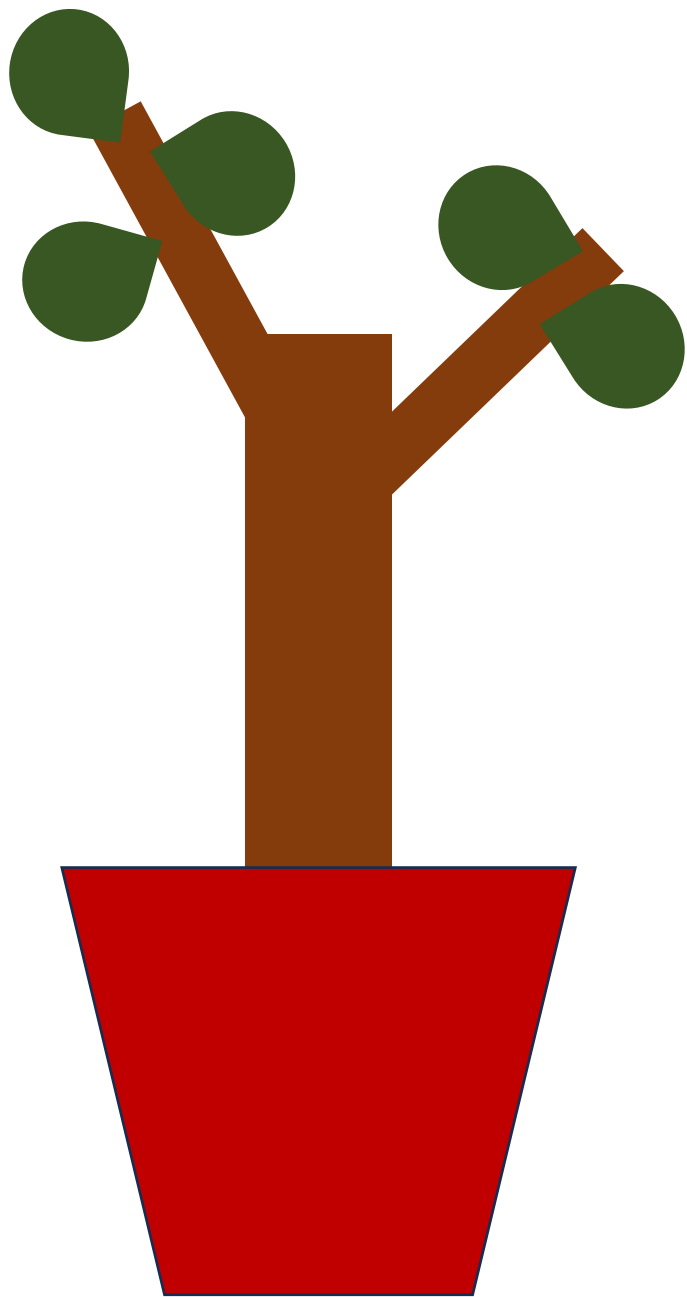
Increased feelings of **contentment** and **relaxation**

Feeling **warm** or **comfortable** and at **peace**

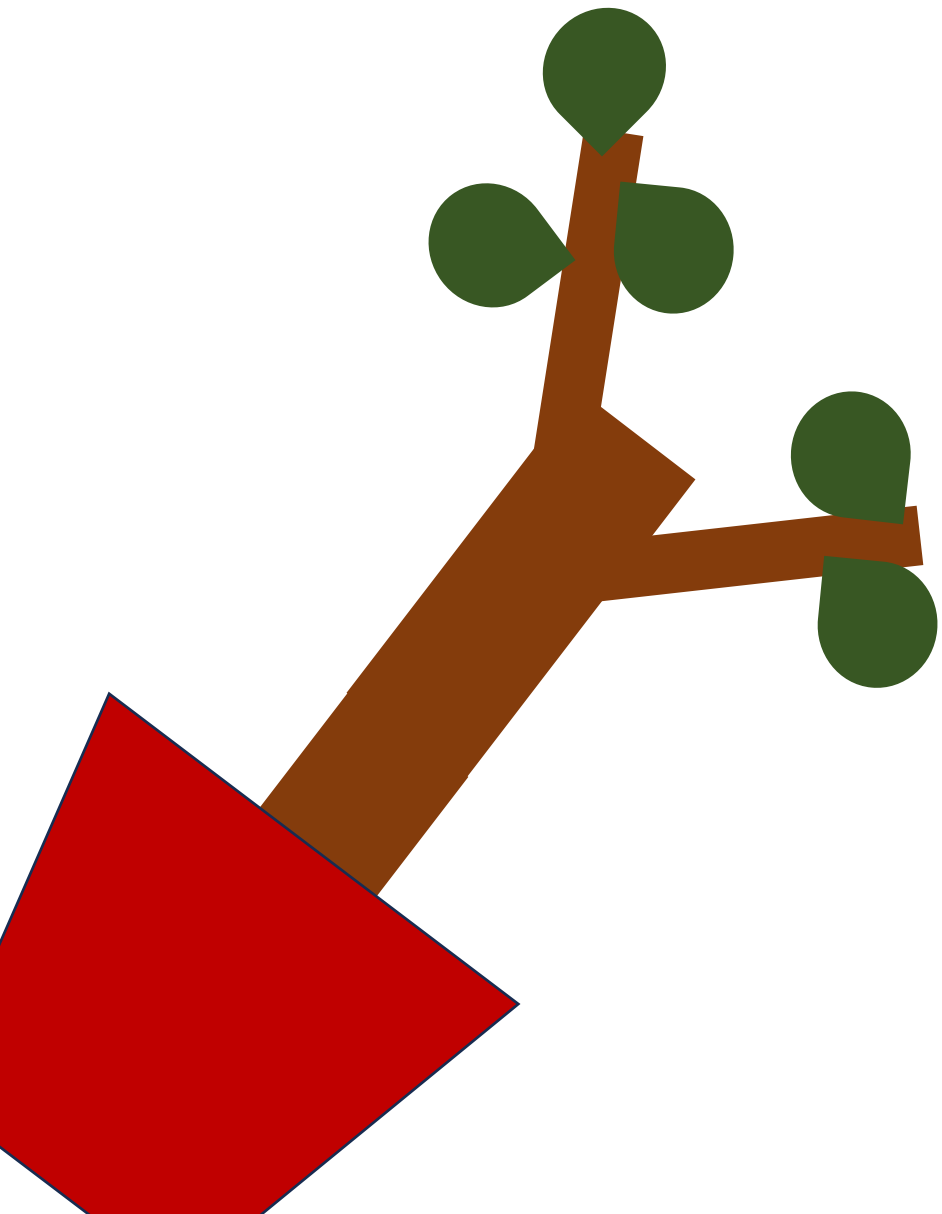
Withdrawal

Opposite physically and psychologically from high

- Drug required re-equilibration
- Withdrawal requires re-re-equilibration



Equilibrated



Un-Equilibrated

Withdrawal

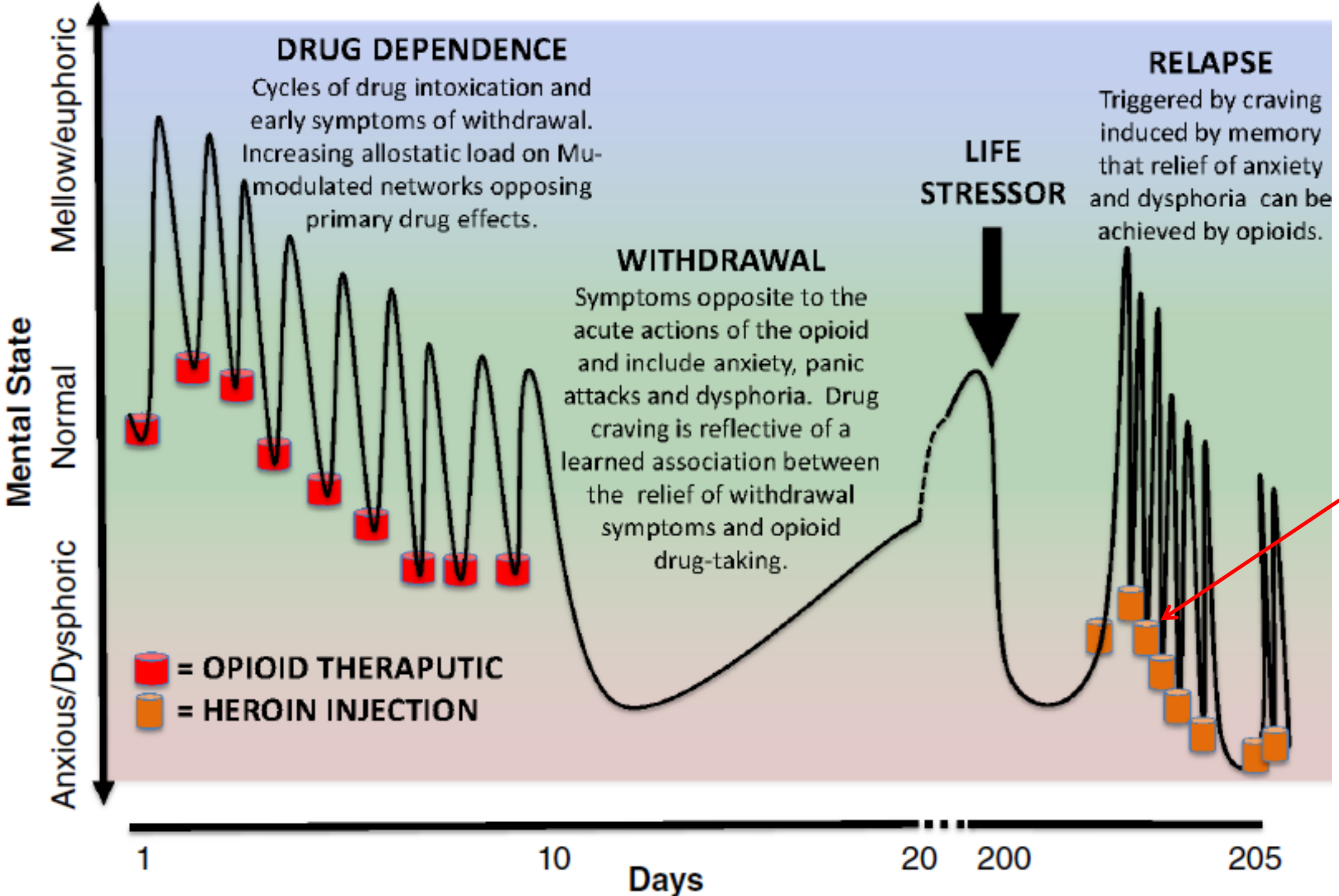
Opposite physically and psychologically from high

- Drug required re-equilibration
- Withdrawal requires re-re-equilibration

Acute Drug State	Withdrawal
Euphoric	Dysphoric
Anxiolytic	Agitation/panic
Sedation, Lethargy	Excited
Constipation	Abdominal cramping, Diarrhea

Withdrawal Example (hydrocodone/APAP)

Day	1	2	3	4	5	6	7...→
Muscle aches	●	●	○	○	○		
Shivers			●	●	●		
Goosebumps			●	●	●		
Mental agitation	●	●					
Heavy sweating	●	●					
Diarrhea	●	●					
Abdominal cramp			●	●	●		
Loss of appetite	●	●					
Insomnia	●	●					
Intense drug craving	●	●					
Nausea	●	●				●	●
Vomiting			●	●	●		
Anxiety	●	●				●	●



Brain still associates opioids with mental relief. Now has access to heroin

Substance Use Disorder

Also known as Addiction

A compulsive behavior
centered on seeking a drug and
its effects for nonmedical
reasons--generally for pleasure

Criteria for Substance Abuse Disorders



Cravings to use the substance



Wanting to cut down or stop but not managing to



Taking the substance in larger amounts or for longer than you're meant to



Neglecting other parts of your life because of substance use



Continuing to use, even when it causes problems in relationships



Using substances even when it puts you in danger

- Mild
 - 2-3
- Moderate
 - 4-5
- Severe
 - 6 or more

Tolerance

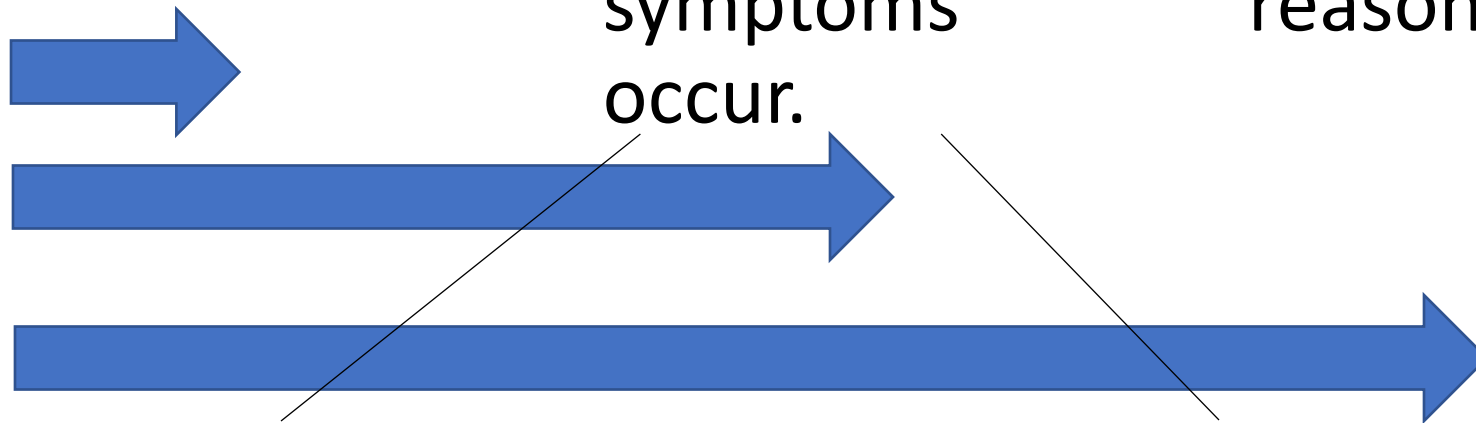
Diminished effect (physical and/or psychological) of the drug

Dependence

Drug-induced state where upon cessation, physical and/or psychological **withdrawal symptoms** occur.

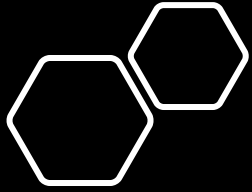
Substance Use Disorder

A compulsive behavior centered on **seeking** a drug and its effects for nonmedical reasons



Physical Withdrawal – Cramps, diarrhea, secretions, abdominal pain upon cessation

Psychological Withdrawal – Dysphoria, anxiety, irritability upon cessation

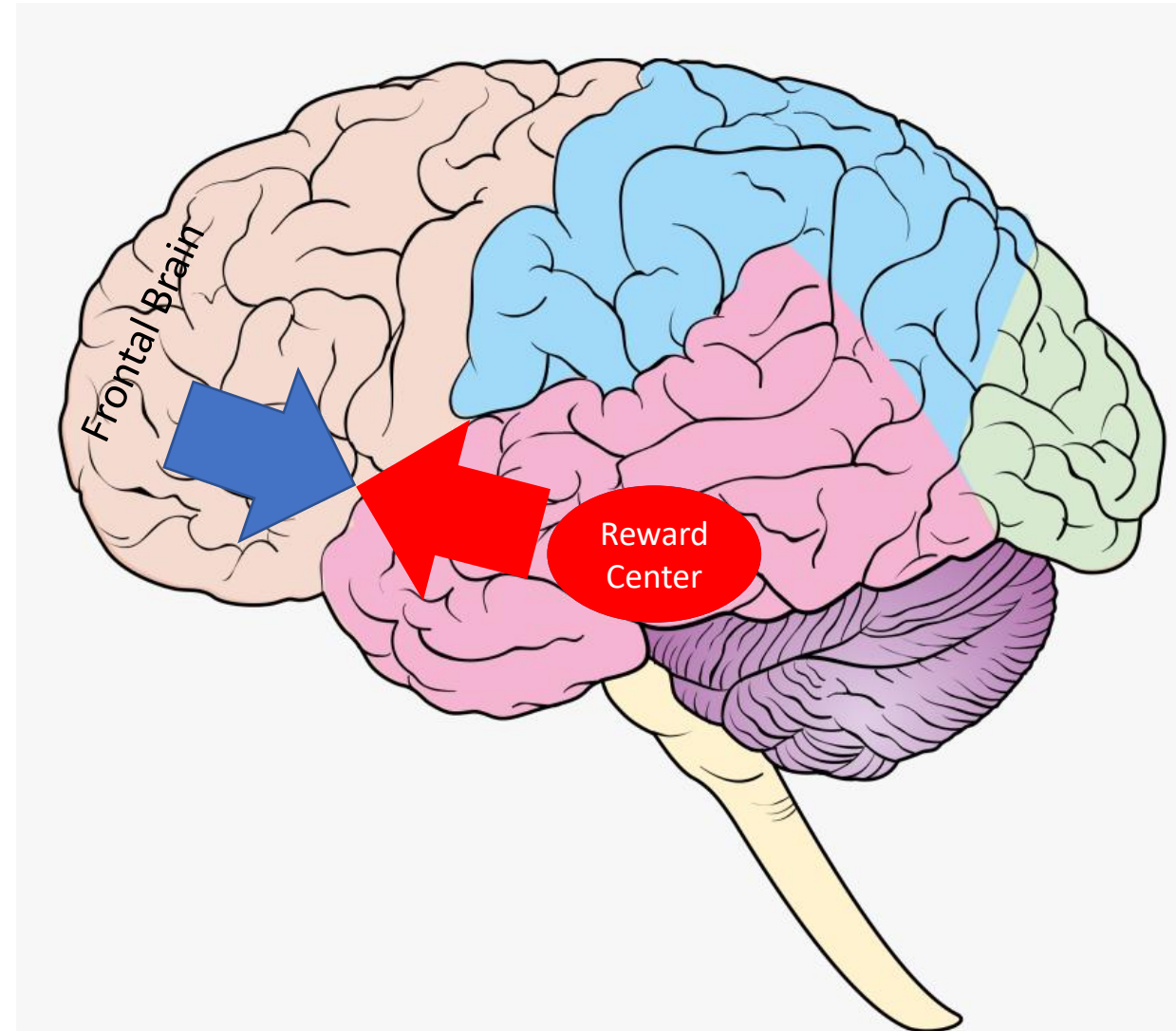


Substances of Substance Use Disorder

- Alcohol
- Caffeine
- Cannabis
- Hallucinogens
 - LSD
- Inhalants
- Opioids
- Sedatives, hypnotics, or anxiolytics
- Stimulants
 - Amphetamine-type substances, cocaine
- Tobacco
- Other or unknown substances

Older Understanding of Addiction

- Once addiction **“switch”** is turned on with **hijacking of reward pathway**, extremely **hard to turn off**
 - **Battle** between **frontal brain** and **reward pathway**

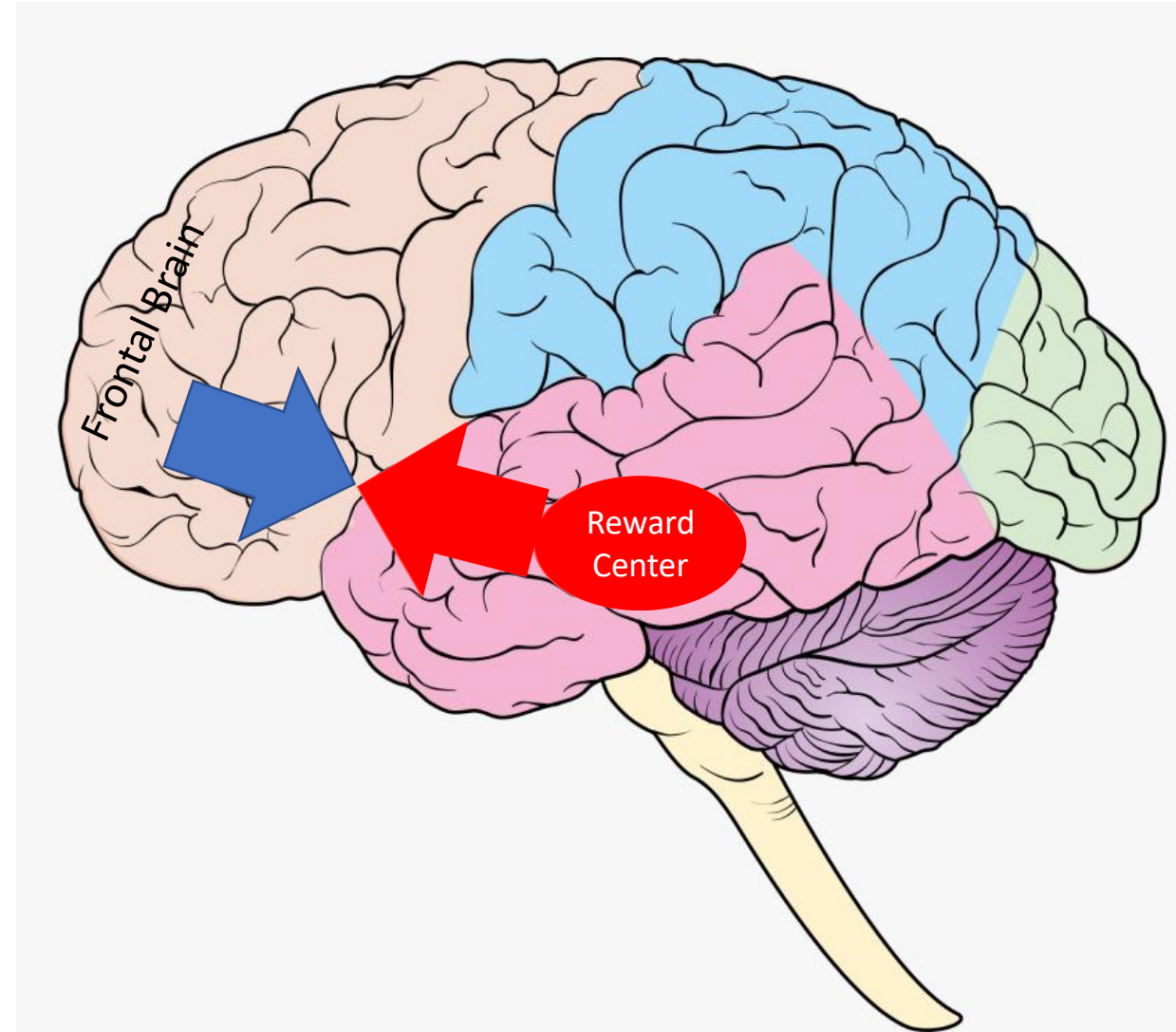


Older Understanding of Addiction

- **Only turned on if vulnerable in these areas**
 - Biological (eg, genetic predisposition)
 - Psychological (eg, depression/anxiety)
 - Social (eg, drug-abusing environment)
- Without those vulnerabilities, addiction risk is minimal

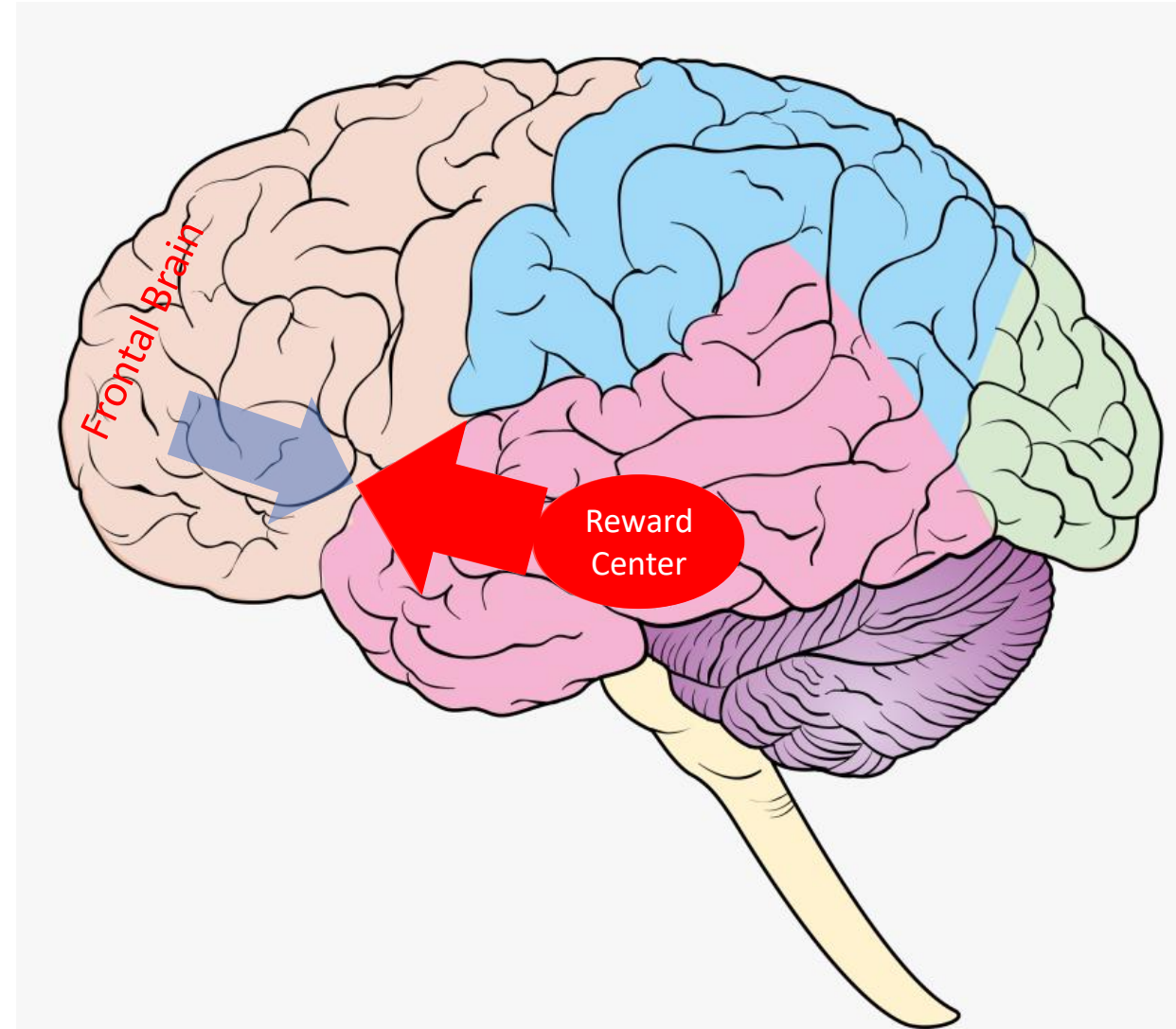
Updated Understanding of Addiction

- Addicted/Non-Addicted “**switch**” is a **spectrum**
 - Neurobiologically distinct
 - But clinically, DSM-5 now has: mild, moderate, severe



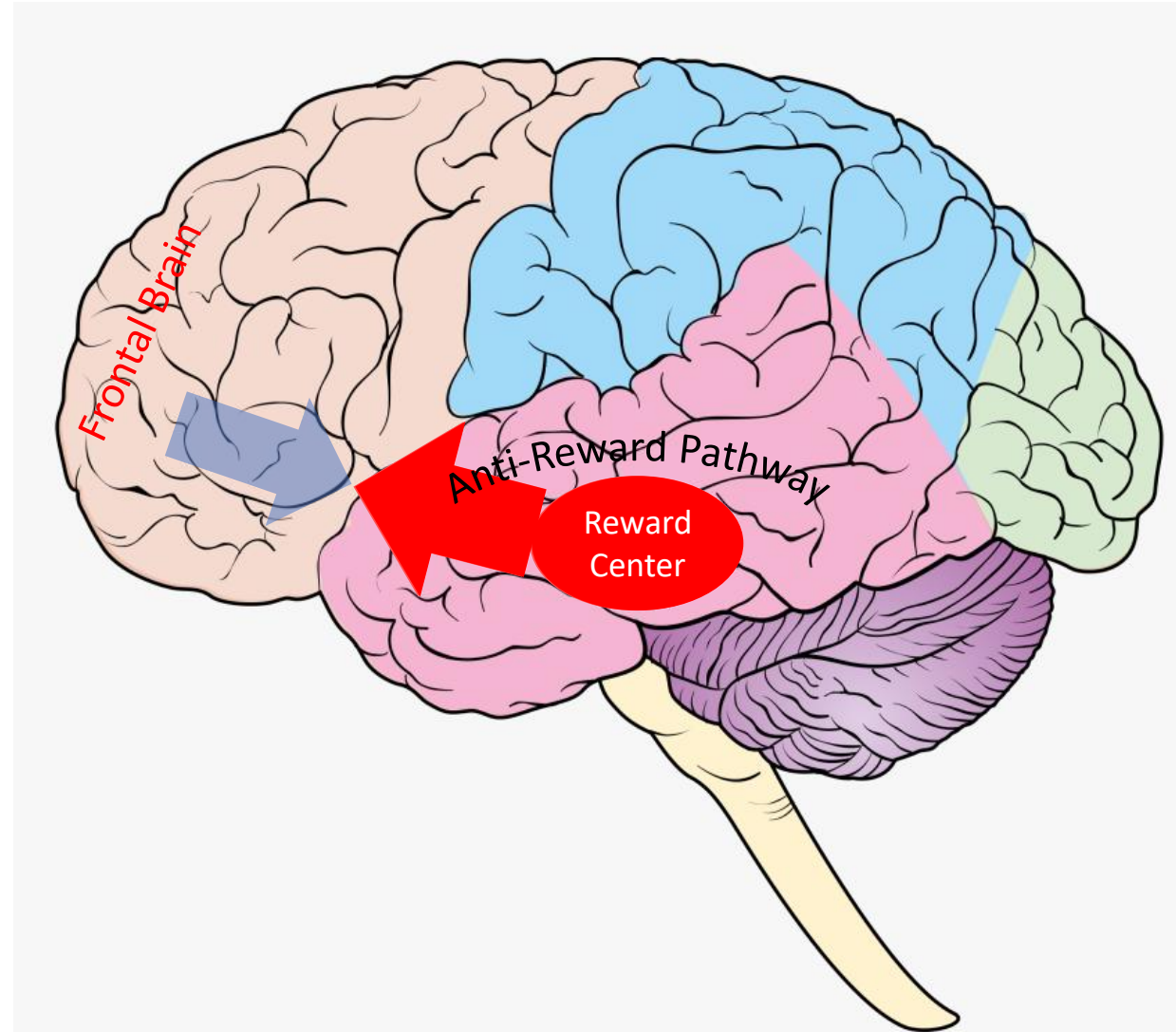
Updated Understanding of Addiction

- **Frontal brain is also hijacked**
 - Addict does not realize his/her rational thought is under drug's control



Updated Understanding of Addiction

- **Anti-reward pathway** is equally appreciated



The 2 Sides to Addiction

Reward	Anti-Reward (“Dark side of addiction”)
Dominates early addiction <i>Drug use is a form of Pleasure seeking</i>	Less prominent in early addiction
Dopamine-mediated	More complex
Uses pleasure regions	Mediates dysphoria, irritability, malaise, feeling of crawling out of own skin
Less prominent later in addiction	Dominates later addiction <i>Drug use is for relief from pain and discomfort</i>

Increased Risk for Addiction



Opioid Situations We Worry About

Being an unwitting
enabler of SUD

Creating a SUD

Creating SUD in the
young



Risk with Early Use

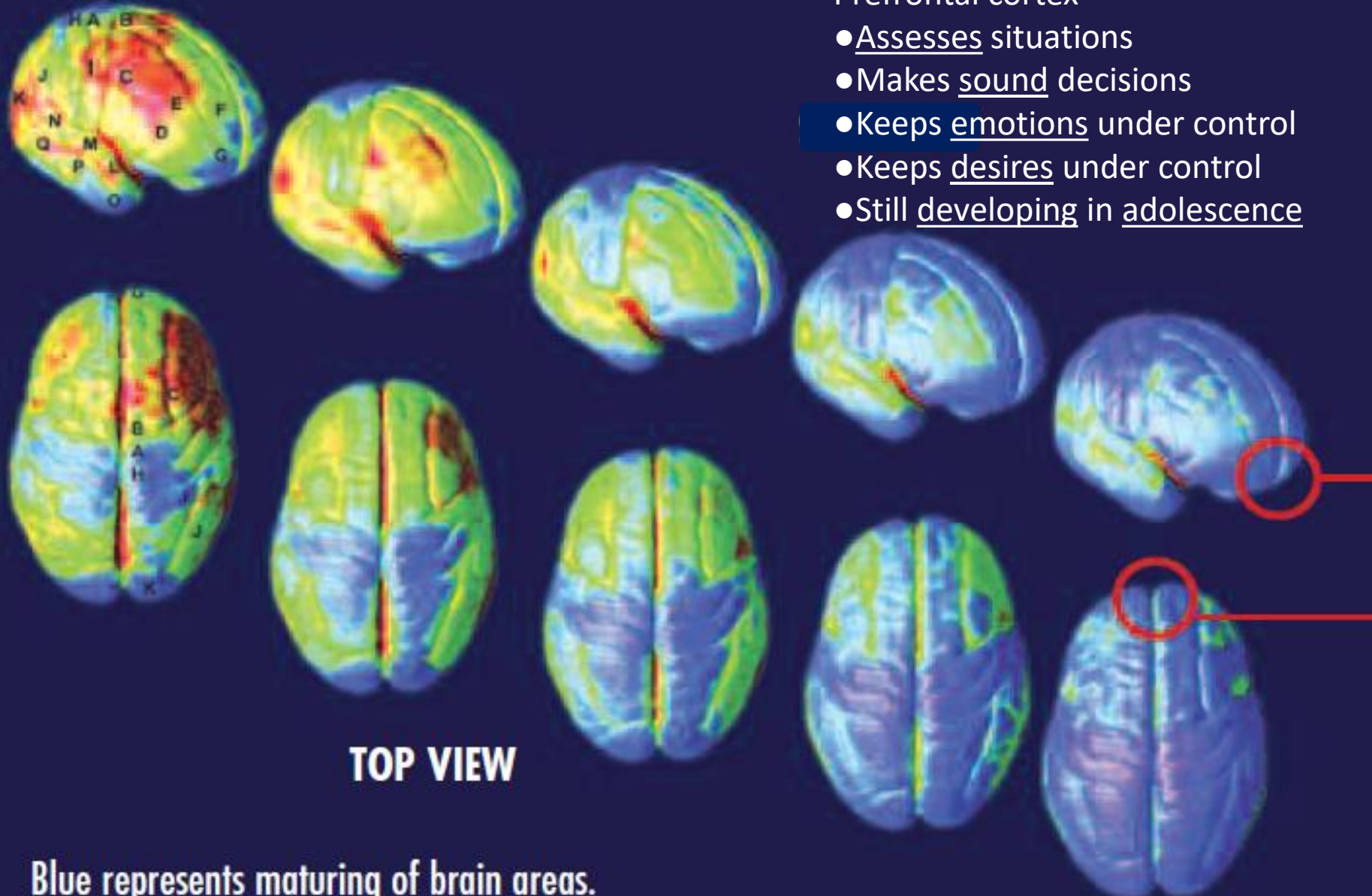
The **earlier** a person begins using drugs, the **more likely** to become addicted

- Drug's effect on **developing** brain
- **Reflective** of early social and biological **risk factors**
 - Unstable family
 - Abuse
 - Genetics
 - Mental illness

AGES

5

20



Prefrontal cortex

- Assesses situations
- Makes sound decisions
- Keeps emotions under control
- Keeps desires under control
- Still developing in adolescence

TOP VIEW

Blue represents maturing of brain areas.

Drugs likely affect developing brain more

Drug Abuse in Children

Risk Factors	Protective Factors
Aggressive behavior	Good self-control
Lack of parental supervision	Parental monitoring and support
Poor social skills	Positive relationships
Availability of drugs at school	School anti-drug policies



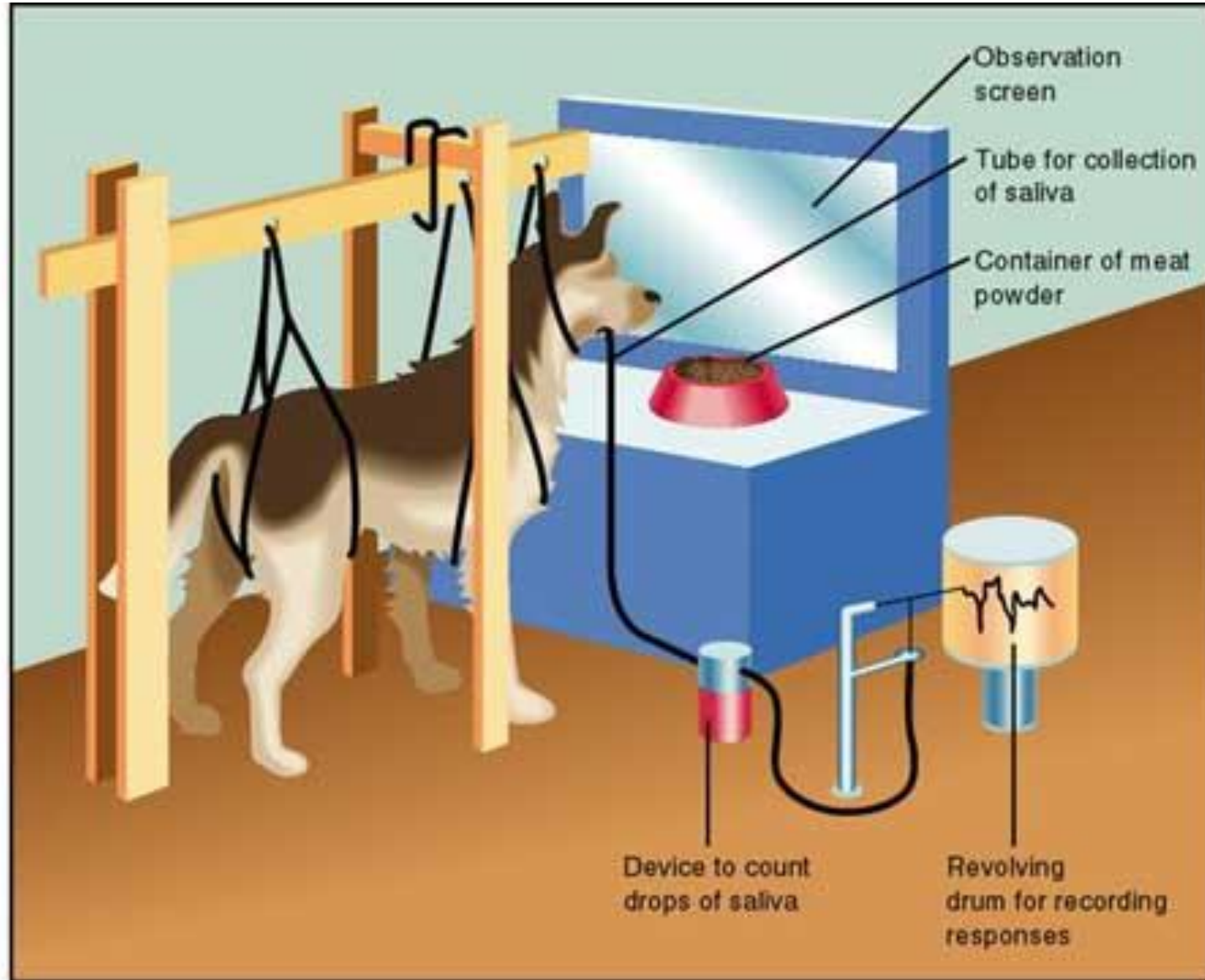
Required Informed Consent for Minors

- Discuss with (1) minor AND (2) parent or guardian:
 - Risks of misuse
 - Contraindications

Risk with Route of Administration

Smoking and **IV** increase addictive potential

- Positive reinforcement within a few seconds
- Powerful high
- Can fade in a few minutes
- Stark contrast drives more use





Risk During Transition



Adult

- Divorce
- Loss of job

Child/Teen

- Divorce
- Move
- Changing schools (middle-school to high-school, etc)

Biology/Genes

- Genetics
- Gender
- Mental Disorders

- Route of administration
- Effect of drug itself



Environment

- Chaotic home and abuse
- Parent's use and attitudes
- Peer influences
- Community attitudes
- Poor school achievement

- Early use
- Availability
- Cost

DRUG

Brain Mechanisms

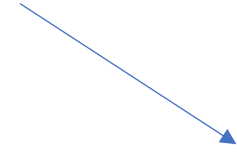
Substance Use Disorder

MISUSE AND
DIVERSION

Misuse & Diversion



“the use of a medication other than as directed or as indicated, whether willful or unintentional, and whether resulting in harm or not”



“the intentional transfer of a controlled drug from legitimate distribution and dispensing into illegal channels”

Pain Medication



Pain Relief to Person B

Pain Relief from C

Pain Relief from X to Person A as Y/d for Z days

Pain Relief as $(Y+2)/d$

Getting “high”

(Practically speaking, there is much overlap)

Statistics

3 million use heroin, cocaine, hallucinogens and methamphetamine

Only 4% of those abusing Rx drugs obtained from drug dealer or stranger

More new drug users began with pain relievers than with marijuana or cocaine

Statistics

- 21-29% of patients prescribed opioids for chronic pain misuse them
- 8-12% of those using an opioid for chronic pain develop a SUD
- 4-6% who misuse prescription opioids transition to heroin
- 80% of people who use heroin first misused prescription opioids
- Among 38 states with prescription opioid overdose death data, 17 states saw a decline between 2017-2018; none experienced a significant increase

- Drugabuse.gov

Causes of Past Rise in Opioid Abuse

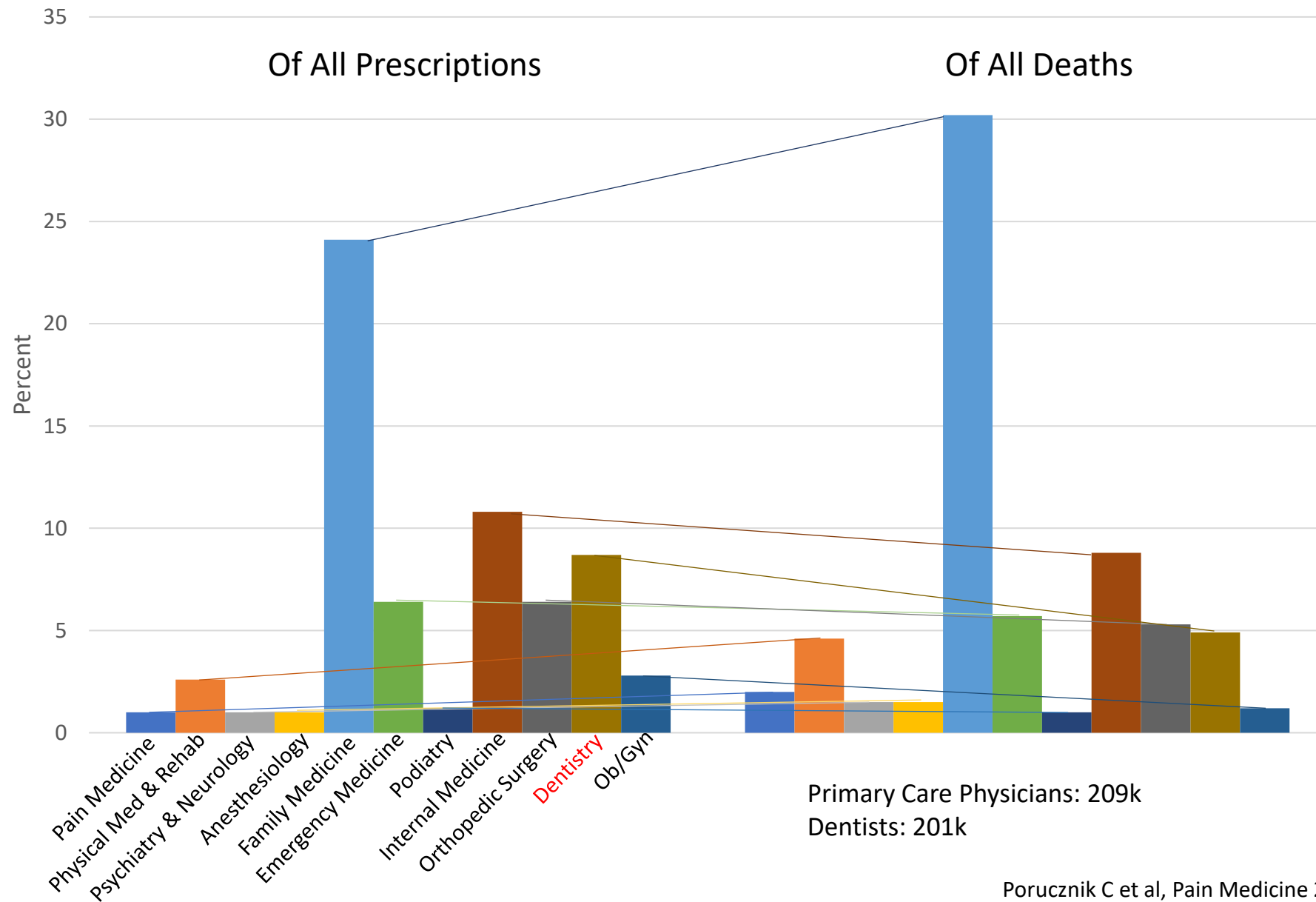
- ↑ chronic pain
- ↑ opioid prescriptions
- ↑ stress
- ↑ depression

- Evans, CJ & Cahill CM, F1000 Research 2016



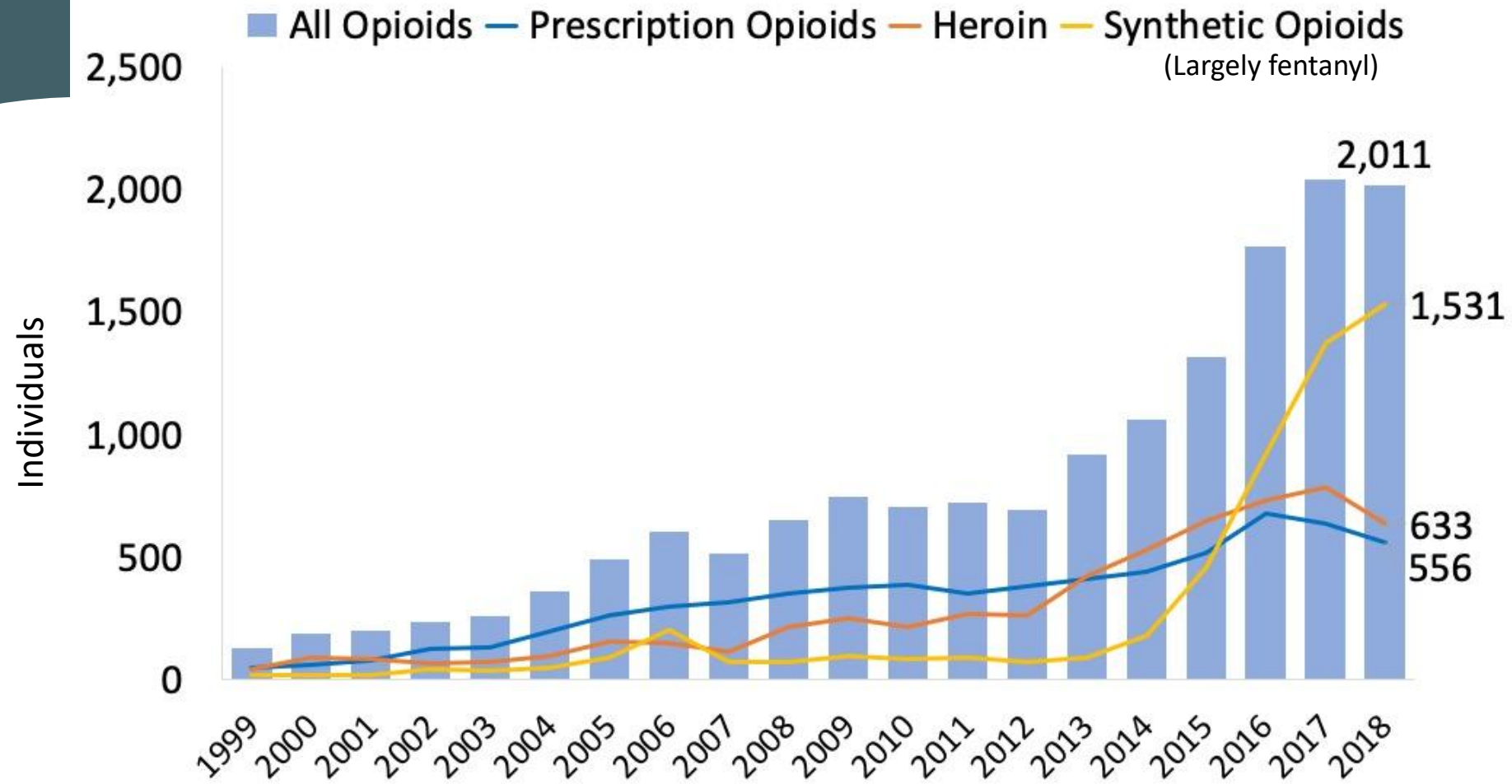
Law enforcement and **DEA** notice this, and **consider healthcare professionals to be at least part of the problem**

Who is prescribing them?

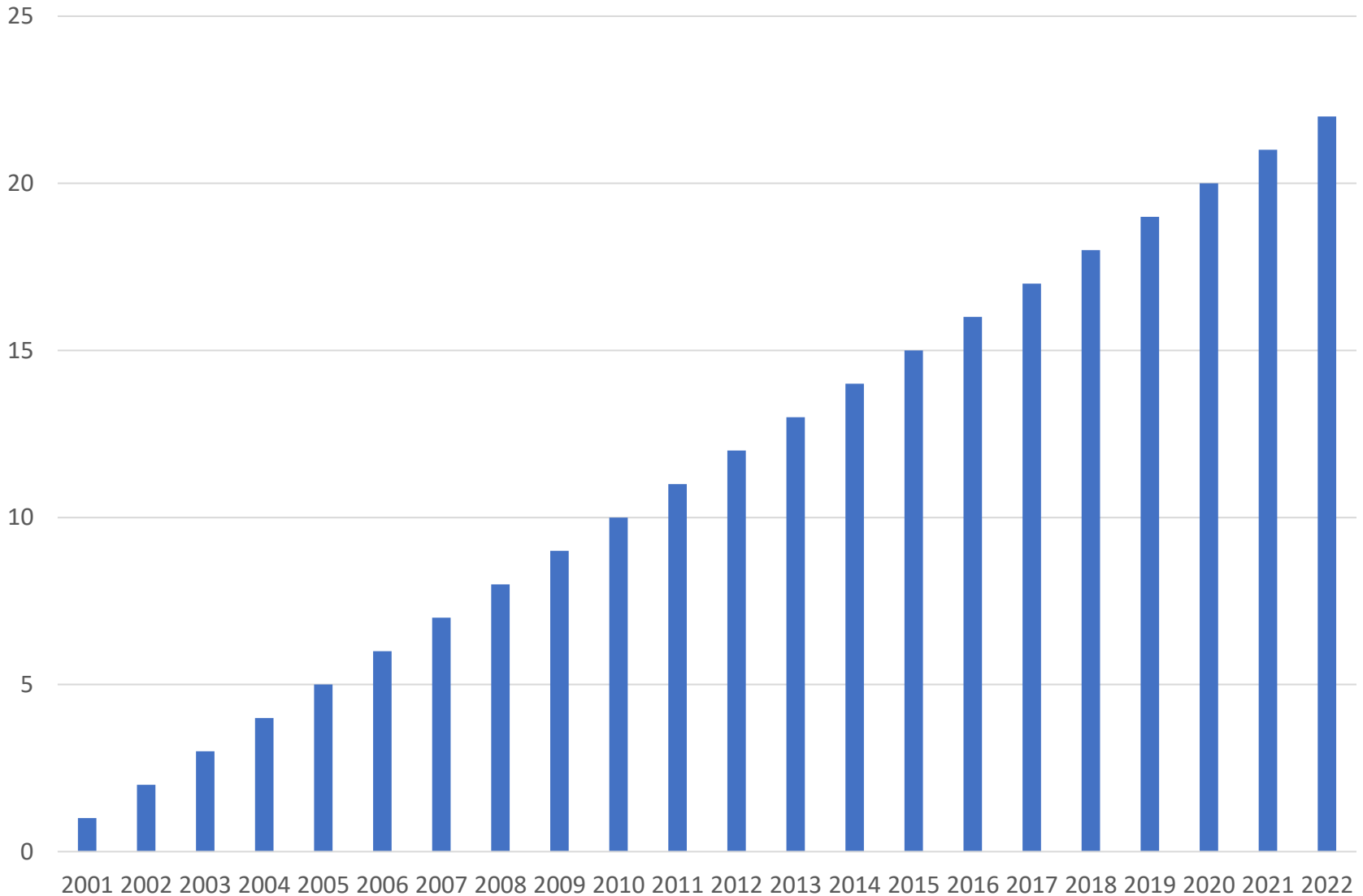


Pain Reliever Dependence/Abuse

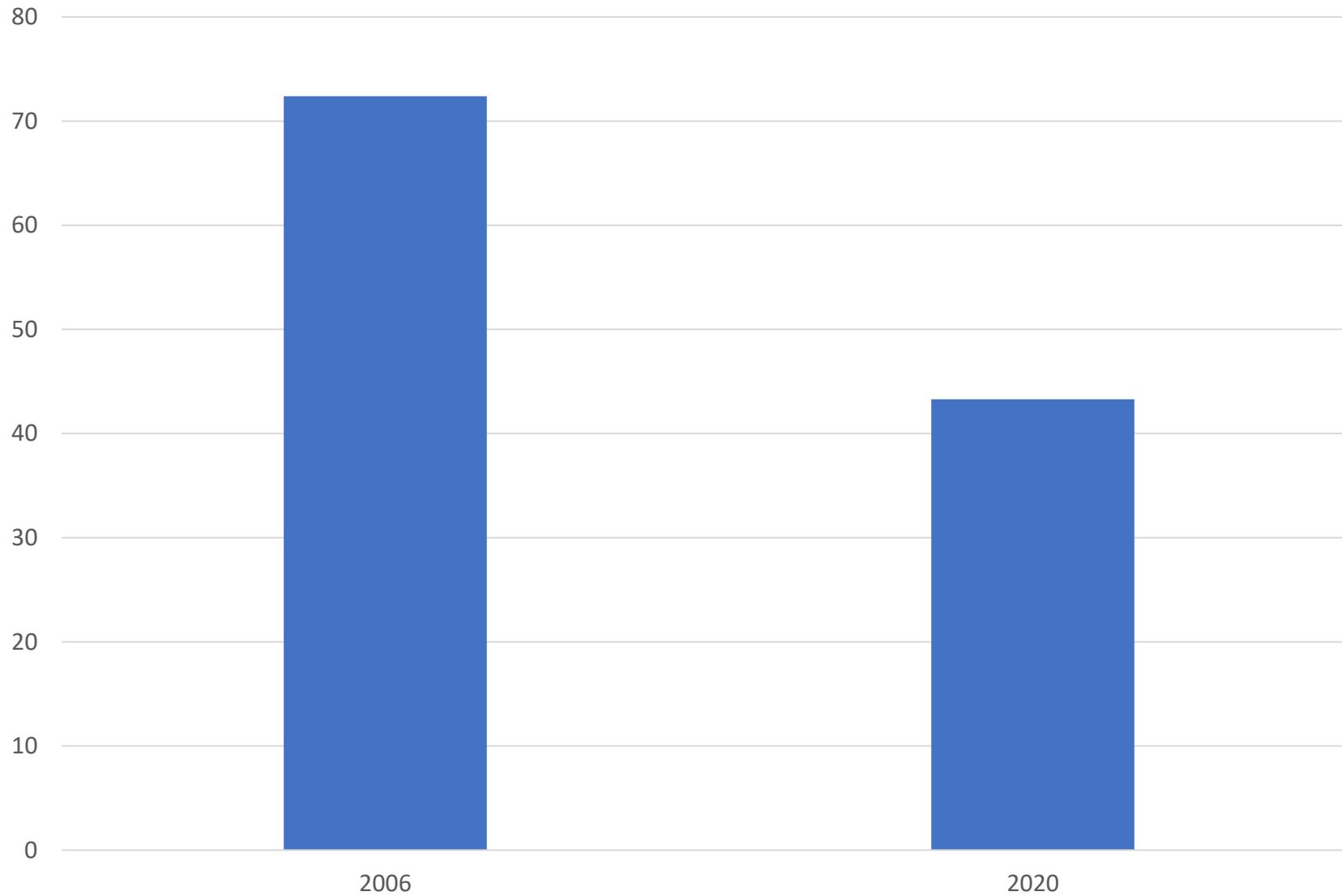
Drug and opioid-involved overdose deaths in Michigan



Years since 2000



Opioid Rx / 100 persons



Misuse

Opioids involve significant risk

- Adverse effects
- Overdose
- Dependence
- Drug-drug interactions

Prescription takes those, and benefits, into careful, individualized consideration

Patients are not trained to safely alter the prescription

- ie, take it other than as directed
- ie, misuse

More than
half of
dentist-
prescribed
opioids go
unused

- Average of 20 hydrocodone tablets prescribed after third molar extraction

- Maughan BC, et al, Drug Alcohol Depend. 2016 Nov 1;168:328-334. PMID: 27663358.

Dental Opioid Rx may start the process

Dentists are the leading source of prescription opioids for adolescents

- Schroeder AR et al, JAMA Intern Med. 2019 Feb 1;179(2):145-152

Opioid Rx for third molar extraction may be associated with 2.69x higher risk for repeat opioid use

- Harbaugh C et al, JAMA, Summer 2018

Disposing of Unused Narcotics

- Drug Take Back Program
 - DEA-Authorized collectors can be found by zip code or city

Regulatory Requirements for Prescribers and Dispensers

REGULATIONS'
ROLE IN
PREVENTING
DIVERSION

Schedule I

- High potential for abuse
- No currently accepted medical use in US
- Lack of accepted safety for use under medical supervision
- Examples:
 - Heroin - opioid
 - Lysergic acid diethylamide (LSD) - hallucinogen
 - Peyote - hallucinogen
 - Methaqualone - sedative
 - 3,4methylenedioxyamphetamine (“MDMA”) - Ecstasy, stimulant & hallucinogen

Schedule II

High potential for abuse
which may lead to **severe**
psychological or physical
dependence

Accepted medical use, or a
currently accepted medical
use with severe restrictions

Schedule II Opioid Examples

- Morphine
- Opium
- Cocaine
- Any combination products containing:

Hydrocodone

Vicodin*
Norco
Lortab
Vicoprofen
Reprexain

Or these

Hydromorphone (Dilaudid),
Methadone (Dolophine),
Meperidine (Demerol),
Oxycodone (Oxycontin)
Fentanyl (Duragesic)

*No longer made under brand name; only available as generic (named by its components).

Schedule II Example Stimulants & Other

Stimulants:

- Amphetamine (Dexedrine, Adderall)
- Methamphetamine (Desoxyn)
- Methylphenidate (Ritalin)
- Lisdexamfetamine (Vyvanse)

Sedative-hypnotics:

- Amobarbital
- Glutethimide

Schedule II Prescriptions

Some states (not CA*) and many insurance carriers limit the quantity of controlled substances dispensed to a 30-day supply

Refilling is prohibited

Schedule II

May issue **multiple** Rx authorizing a **total** of up to a **90-day** supply provided the following are met:

- **Each** separate Rx must be issued for **legitimate** medical **purpose** by practitioner acting in usual course of professional practice
- **Written** instructions on each Rx (other than the 1st prescription, if that prescription is to be filled immediately) indicating the **earliest date** on which a pharmacy may **fill** each prescription.
- Multiple Rx in this manner does **not** create an undue **risk** of diversion or abuse.
- The issuance of multiple Rx is **permissible** under applicable **state** laws [for CA, it is permitted; https://cvma-inline.net/wp-content/uploads/2018/05/ControlledSubstancePrescriptionsCA_MJ_2018.pdf]

	Schedule II	Schedules III & IV	Schedule V
Original Rx	No limits on quantity		
Refills	Not allowed	Limited by whichever ends first: <ul style="list-style-type: none"> • 120 day supply • 5 refills • 6 months 	No restrictions
Rx valid for	6 months (based on CA, not US, law)		
CURES	Recorded, and must check before prescribing		
Examples	<p>Narcotics: hydrocodone-containing (Norco, Lortab, Vicoprofen) hydromorphone (Dilaudid) methadone meperidine (Demerol) oxycodone (OxyContin) fentanyl (Duragesic)</p> <p>Stimulants: amphetamine (Dexedrine, Adderall), methamphetamine (Desoxyn)</p> <p>Other: cocaine, amobarbital, and glutethimide. ethylphenidate (Ritalin), and lisdexamfetamine (Vyvanse).</p>	<p>III - Products containing less than 90 milligrams of codeine per dosage unit (all codeine analgesic formulations), ketamine, anabolic steroids, testosterone</p> <p>IV - Xanax, Soma, Darvon, Darvocet, Valium, Ativan, Talwin, Ambien, Tramadol</p>	<p>Generally antidiarrheal, antitussive, and analgesic purposes</p> <p>Cough preparations with less than 200 milligrams of codeine or per 100 milliliters (Robitussin AC), Lomotil, Motofen, Lyrica, Neurontin Parepectolin</p>

Schedule III

A potential for abuse less than substances in schedules I or II

Accepted medical use in the US

Abuse may lead to moderate or low physical dependence or high psychological dependence

Schedule III Examples of Opioids

< 90 milligrams of
codeine per dosage
unit

Buprenorphine
products used to
treat opioid addiction

Schedule III Examples of Non- Opioids

Benzphetamine (Didrex)

Anorectic, but cause psychosis, delirium, panic

Phendimetrazine

Anorectic, but cause psychosis, delirium, panic

Ketamine

Sedative, trance

Anabolic steroids such as oxandrolone (Oxandrin)

Sim Testosterone, No psycho activity; for weight gain or muscle growth

Schedule IV

Low potential for abuse relative to schedule III

Accepted medical use in the US

Abuse may lead to limited physical dependence or psychological dependence relative to schedule III

Schedule IV

Example narcotic: Tramadol (Ultram).

Other schedule IV substances include:
(Anxiolytics)

- alprazolam (Xanax)
- clonazepam (Klonopin)
- clorazepate (Tranxene)
- diazepam (Valium)
- lorazepam (Ativan)
- midazolam (Versed)
- temazepam (Restoril)
- triazolam (Halcion)

Schedule III-IV Refills

May be refilled if authorized on the Rx

- Refills for III – IV in CA are limited to **120 day** supply*

May only be refilled up to 5 times within 6 months after the date of issue.

- After 5 refills or after 6 months, **whichever occurs first**, a new Rx is required

Schedule V

Low potential for abuse relative to schedule IV

Currently accepted medical use

Abuse may lead to limited physical dependence or psychological dependence relative to schedule IV.

Primarily containing limited quantities of certain narcotics, generally for antitussive, antidiarrheal, and analgesic

Examples:


- Cough preparations containing not more than 200 milligrams of codeine per 100 milliliters or per 100 grams (Robitussin AC and Phenergan with Codeine)

Schedule V Refills

No limit on number of refills, or total-days-supply for refills

Only limit is 6 months from date on prescription

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6		
All Schedules	Rx <i>Dispense</i> Qty #30,000							
All Schedules						No dispense >6 mo from date written	Rx <i>Denied</i>	
All Schedules	Rx <i>Dispense</i> Refills: 5	Refill <i>Refill</i> Refill #1	Refill <i>Refill</i> Refill #2	Refill <i>Refill</i> Refill #3	Refill <i>Refill</i> Refill #4		No refill >6 mo from date orig Rx written	Refill #5 <i>Denied</i>
Schedule II	Rx A <i>Dispense</i>	Rx A <i>Denied</i> Refill #1	No refills of Sched II					
Schedule III, IV	Rx <i>Dispense</i> Refills: 6	Refill <i>Refill</i> Refill #1	Refill <i>Refill</i> Refill #2	Refill <i>Refill</i> Refill #3	Refill <i>Refill</i> Refill #4	Refill <i>Refill</i> Refill #5	Refill #6 <i>Denied</i>	Max 5 refills
Schedule III, IV	Rx <i>Dispense</i> 1qd, Qty #30 Refills: 5	Refill <i>Refill</i> Refill #1 1qd, Qty #30	Refill <i>Refill</i> Refill #2 1qd, Qty #30	Refill <i>Refill</i> Refill #3 1qhs, Qty #30	Refill <i>Refill</i> Refill #4 1qhs, Qty #30	Refill #5 <i>Denied</i> Refill #5 1qhs, Qty #30		Max refill quantity 120 days
Schedule V	Rx <i>Dispense</i> Refills: 6	Refill <i>Refill</i> Refill #1	Refill <i>Refill</i> Refill #2	Refill <i>Refill</i> Refill #3	Refill <i>Refill</i> Refill #4	Refill <i>Refill</i> Refill #5	Refill <i>Refill</i> Refill #6	Refill #7 <i>Refill</i>



Scheduled Listed Chemical Products (SLCP)

A product that contains ephedrine, pseudoephedrine, or phenylpropanolamine (all **decongestants**) and may be marketed or distributed lawfully

Buyer information recorded in log

Limit daily purchase to 3.6 grams (~15 day supply), or 9g per 30 days

CURES' ROLE IN
PREVENTING
DIVERSION

Controlled
Substances
Utilization Review
and Evaluation
System (CURES)

California's Prescription Drug
Monitoring Program (PDMP)

Database of all Schedule II – V
Controlled substance prescriptions in
California

Purpose: to identify misuse or
diversion

CURES

All prescribers with DEA registration must be **registered**

Make any **changes** to account (eg, address change) within 3 days of effective date.

Maintain effective **controls** for access to patient activity reports

Accessing information for any other reason than caring for one's patients, or **falsifying** an application for access, may result in disciplinary action

Must check CURES before prescribing Schedule II – IV drug.

- **Except** if both are met:
 - Rx a controlled substance as part of the patient’s treatment for a **surgical** procedure
 - Quantity does **not exceed** a nonrefillable 5-day supply.
- If the controlled substance **remains** part of the patient’s treatment
 - CURES patient activity report must be pulled no earlier than **24 hours prior** to prescribing
 - Must check CURES **every 6 months** while the substance is part of the patient’s treatment

Can Staff Check CURES For Doctor?

Staff officially **registered** with CURES as a “**delegate**” to the “parent” prescriber or dispenser user may **initiate a search** for the patient activity report

Only the “**parent**” prescriber or dispenser user can **view** the actual report containing the patient’s history

Prescribers can add and remove delegates from their own user profiles

May the Patient Get a Copy of the Patient Activity Report?

Yes, as long as no additional CURES data is provided

The report is medical information and is protected HIPAA

A copy of the report may be kept as part of the patient's record

CURES

Dept of Justice may **audit** CURES and its users to ensure appropriate use

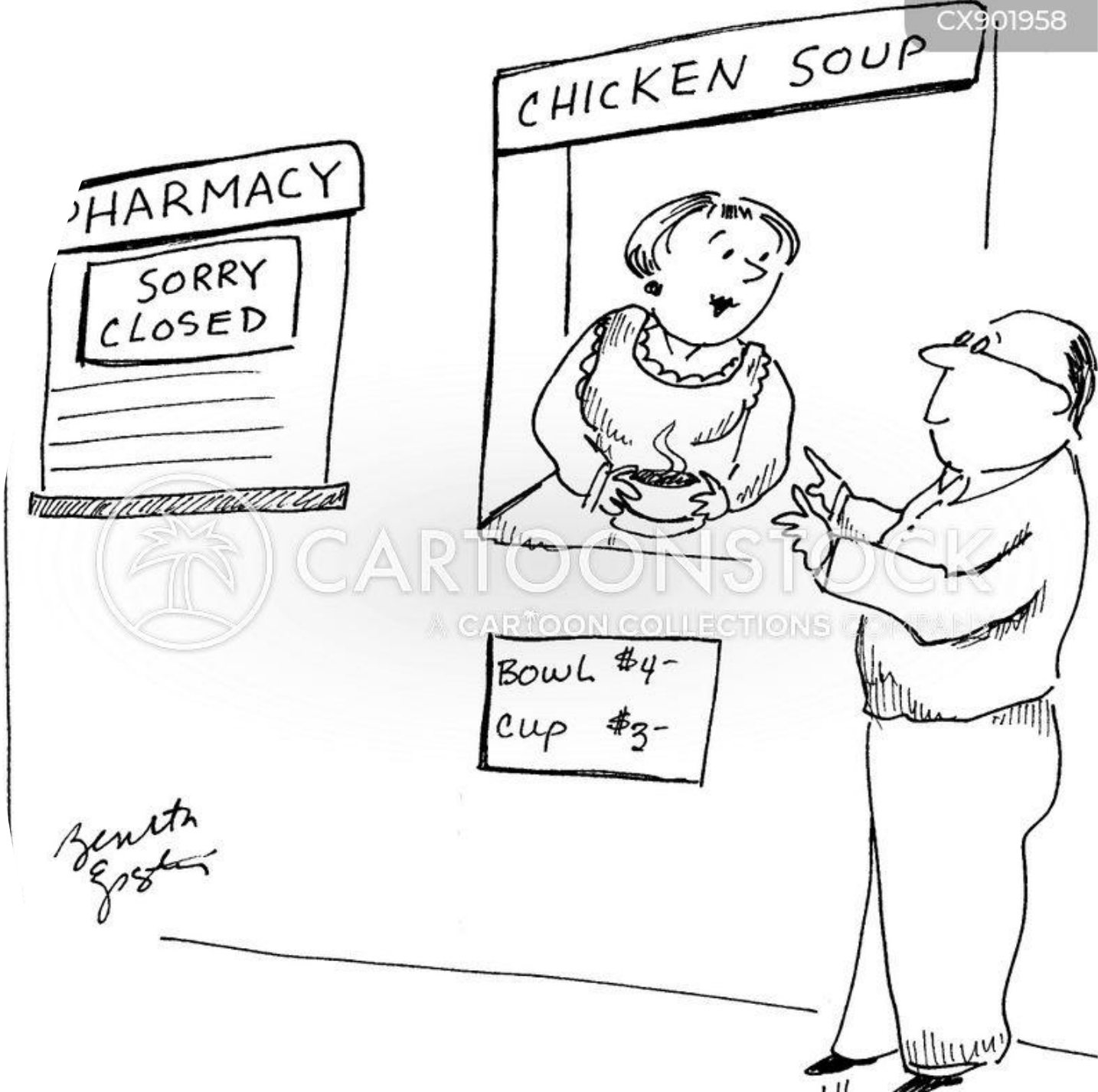
Sharing patient activity report to anyone other than registered user or patient who requests a copy is prohibited

Disciplinary, civil or criminal actions will be taken by Dept of Justice and/or dental board for any **misuse** or inappropriate **access** of patient data

PHARMACIST'S
ROLE IN
PREVENTING
DIVERSION

The Role of the Pharmacist In Preventing Diversion

Professional and Legal Responsibility



Pharmacist's Responsibilities

Protect their practice from becoming an easy target for drug diversion

Not dispense for forged or altered Rx

The CSA holds the pharmacist responsible for knowingly dispensing a Rx that was not issued in the usual course of professional treatment

No Automatic Dispensing

Pharmacist required to exercise sound professional judgment, and to adhere to professional standards, when making a determination about the legitimacy of a controlled substance Rx

Law does not require a pharmacist to dispense a Rx of doubtful, questionable, or suspicious medical legitimacy

Penalties

For deliberately ignoring the high probability that a Rx was not issued for a legitimate medical purpose and filling the Rx, the pharmacist and issuing practitioner may be **prosecuted** for:

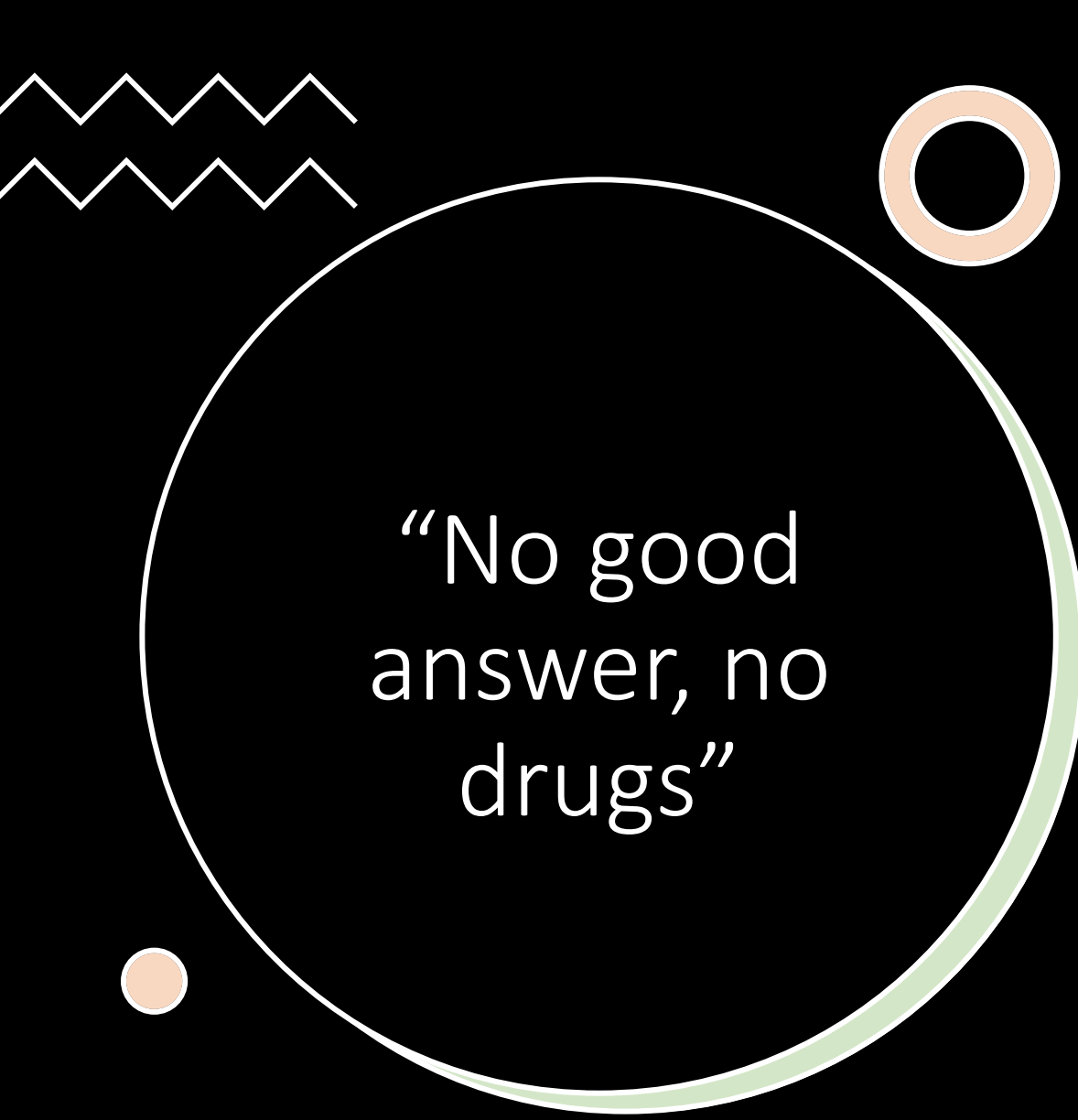
- felony offense (possible imprisonment and a fine)
- civil enforcement actions (for money penalties or injunctions)

DEA may revoke a pharmacy's registration

May be the subject of proceedings against their state licenses

The Role of The Pharmacist in Preventing Diversion

What They Look For



“No good
answer, no
drugs”

- When there is a question about any aspect of the Rx, pharmacist should contact the prescriber for verification or clarification
- When in doubt, pharmacist should require proper ID
 - Although not foolproof (ID papers can be stolen/forged), it does increase the abuser’s risk

“No good answer, no drugs”

If pharmacist believes is fraudulent, should not dispense it and should call local police

If pharmacist believes discovered pattern of Rx abuse, should contact state Board of Pharmacy or local DEA Field Office.

DEA and state authorities consider retail-level diversion a priority issue

May indicate Rx was not issued for legitimate medical purpose:

Prescriber writes significantly more Rx (or in larger quantities) compared to other practitioners in the same specialty in the area

Patient returning too frequently

- Rx which should last for a **month** in legitimate use is being refilled **biweekly**, weekly, or even daily

The prescriber writes Rx for antagonistic drugs, such as depressants and stimulants, at the same time

- Abusers often request Rx for “**uppers and downers**” at the same time.
 - Uppers: stimulants, etc
 - Downers: opioids, anxiolytics, etc

May indicate Rx was not issued for legitimate medical purpose:

A number of people appear simultaneously, or within a short time, all bearing similar Rx from same doctor

People who are not regular patrons or residents of the community show up with Rx from the same doctor

Red Flags to the Pharmacist

Nervous patient

Age of patient

- **Young**, with **chronic pain medications**

Cash payments

- As opposed to insurance payment
- Trying **not to alert insurance**
- Too **frequent to be approved** by insurance

Multiple patients at the same address

- Usually **family** members
- Suspicious of **helping** the addict acquire

Red Flags to the Pharmacist

Early refill requests

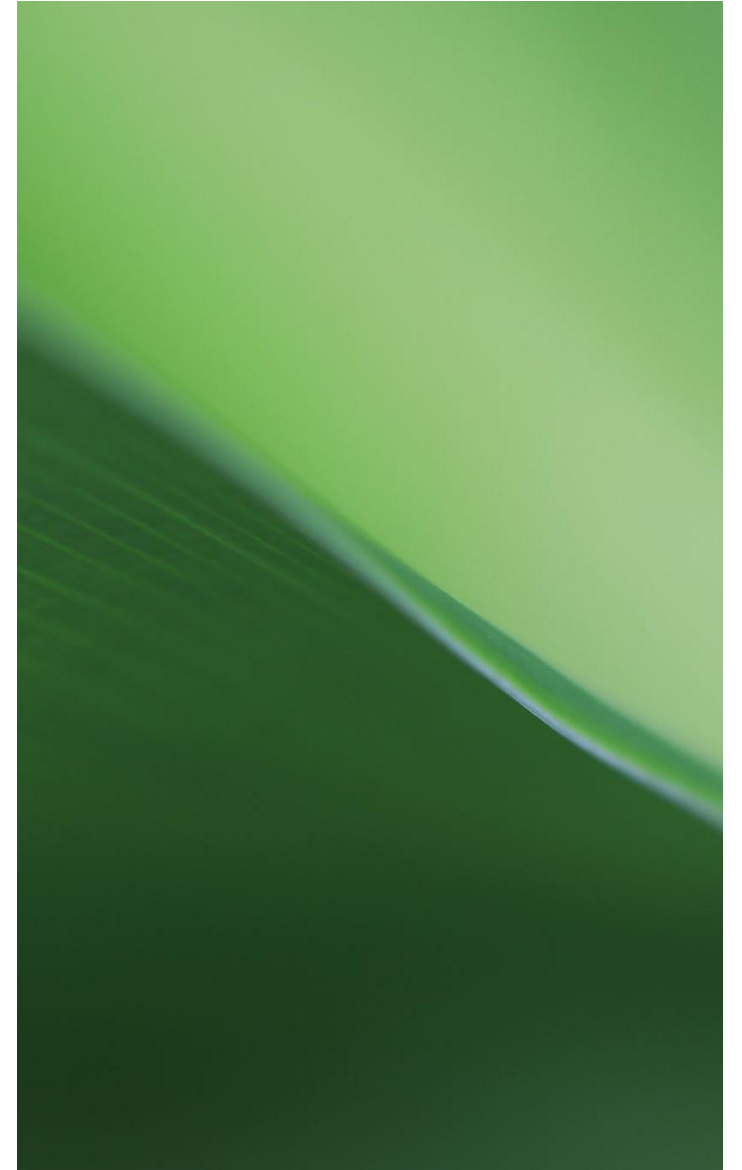
Initial Rx written for unusually high quantities

Duplicative drugs

- Percocet & Norco

Same prescribing patterns for multiple patients


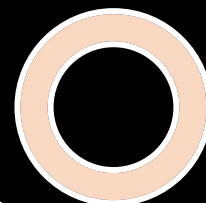
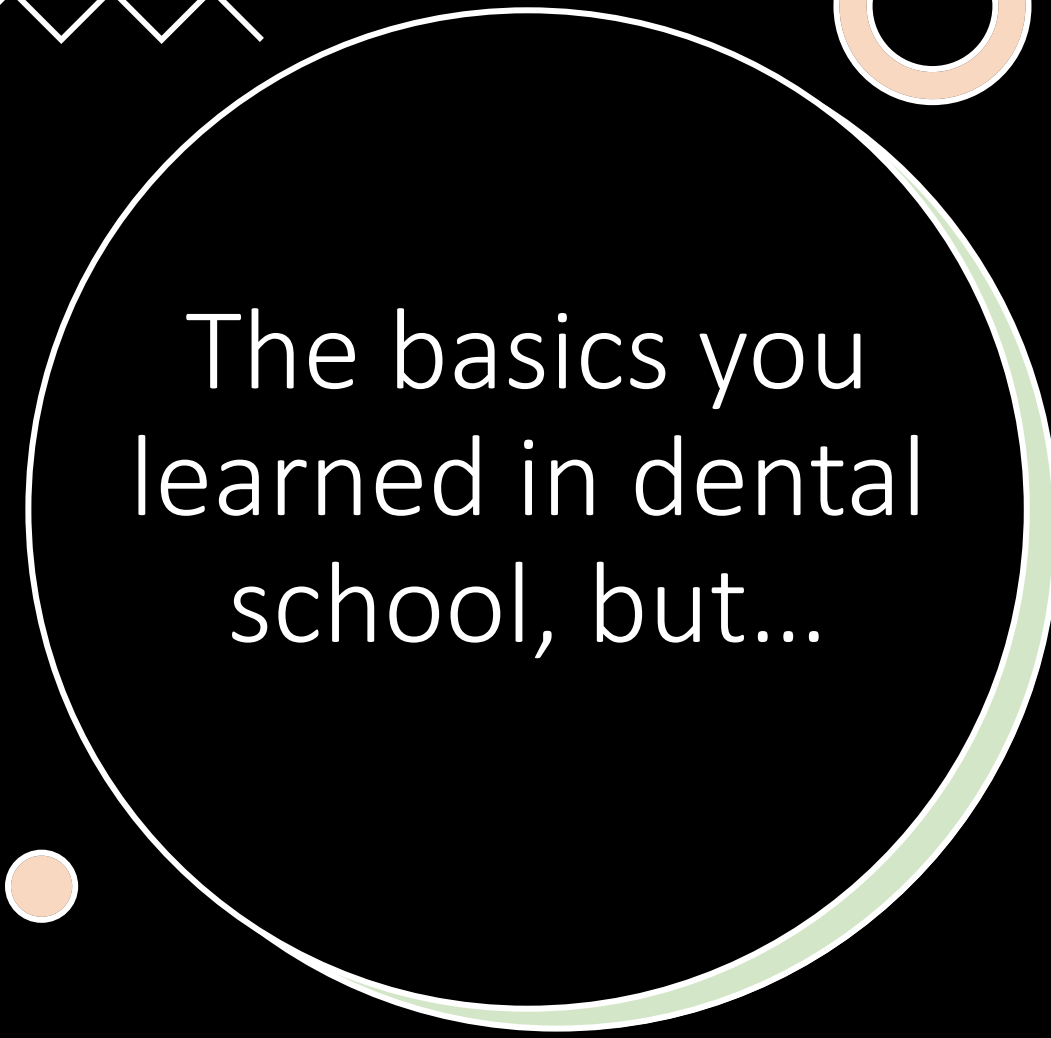

- Addict may have preferences (eg, strongest opioid, max number of tablets that does not raise much suspicion)
- Using others to get Rx



Practices for Pain Management in Dentistry

UNDERSTANDING
PAIN

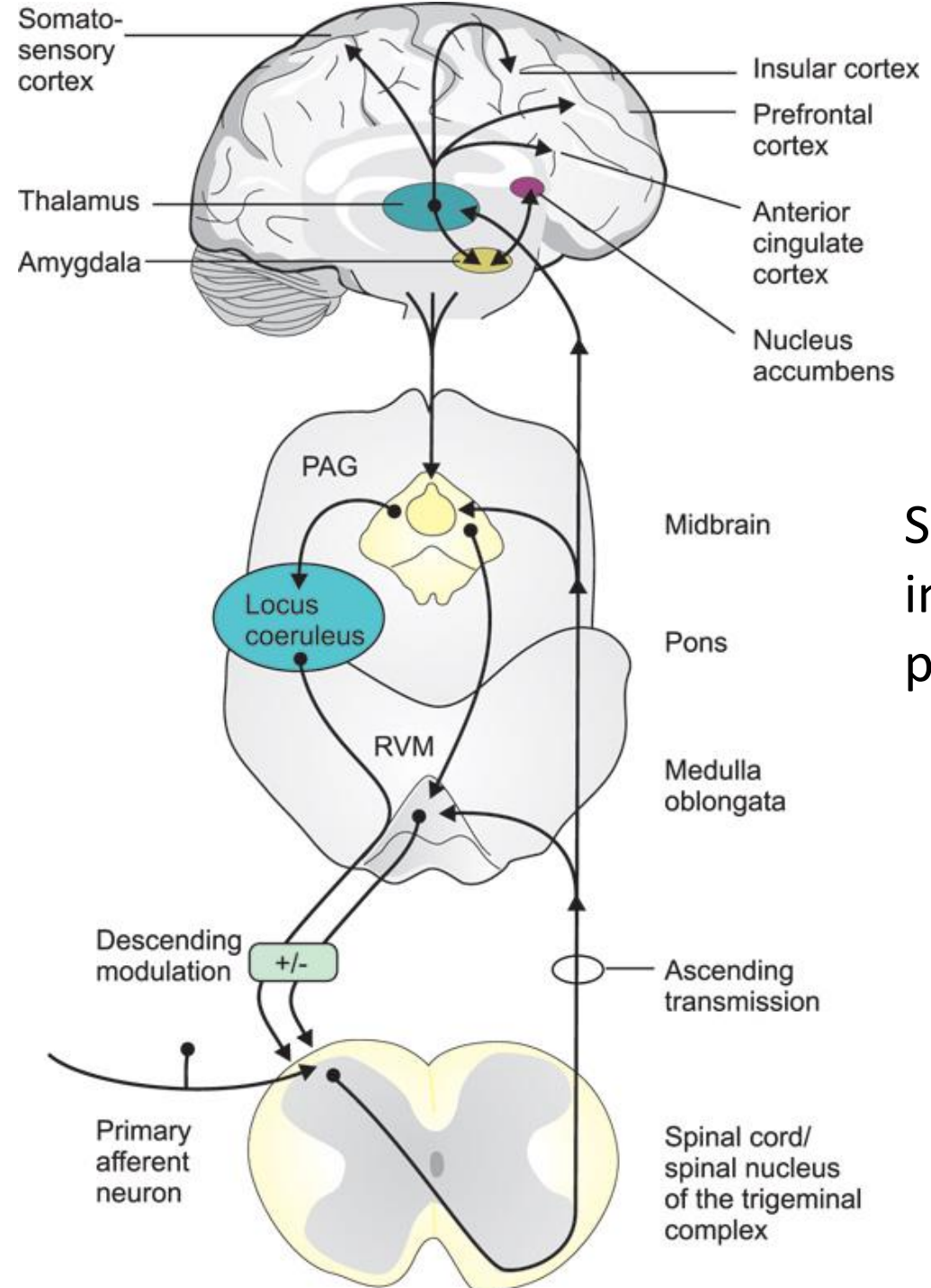
(so you can treat it)



The basics you
learned in dental
school, but...



Pain Perception is NOT Hardwired



Still an incomplete picture

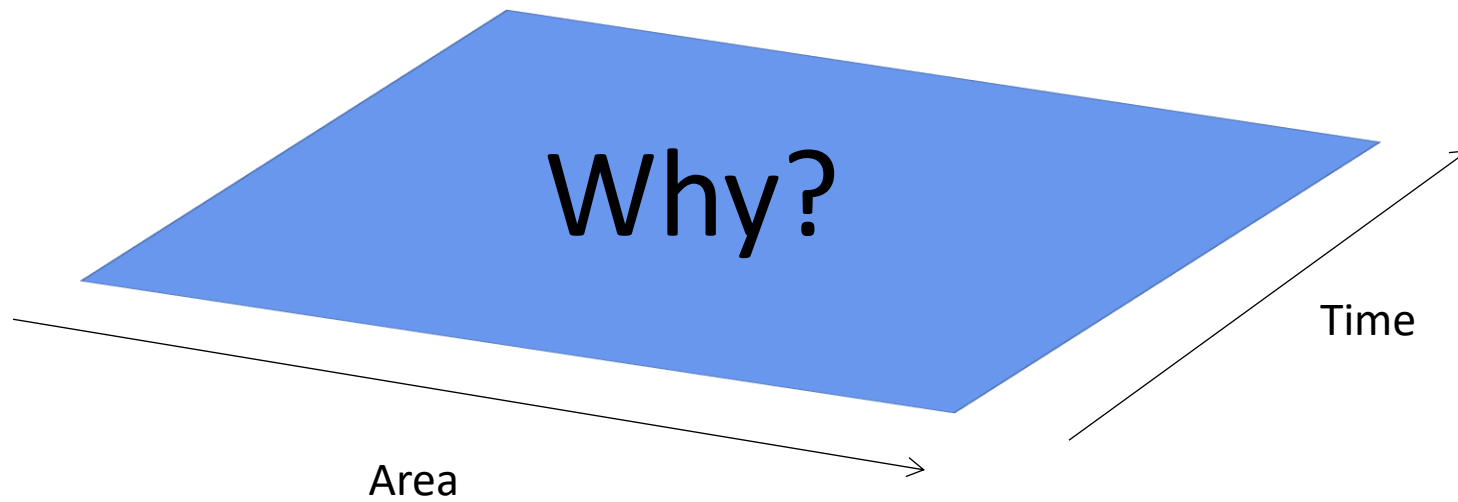


Pain Perception is
NOT Hardwired

- Purpose of pain:
 - Protect us from potential damage
- Our pain response is well-matched to our level of durability

Chronic Pain

2-Dimensional Expansion

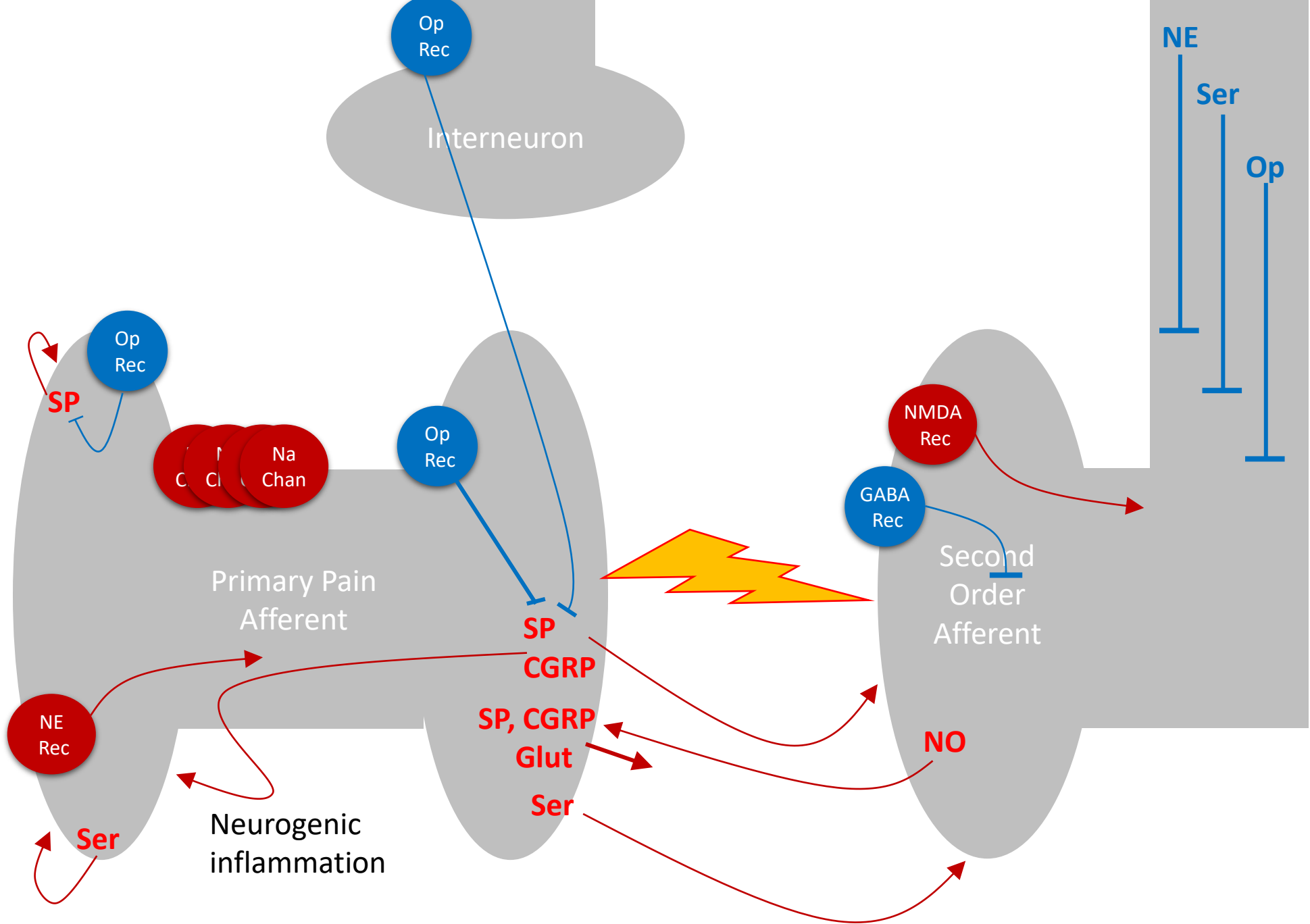


**TURN OFF SEATBELT
BEEP! BEEP! BEEP!**



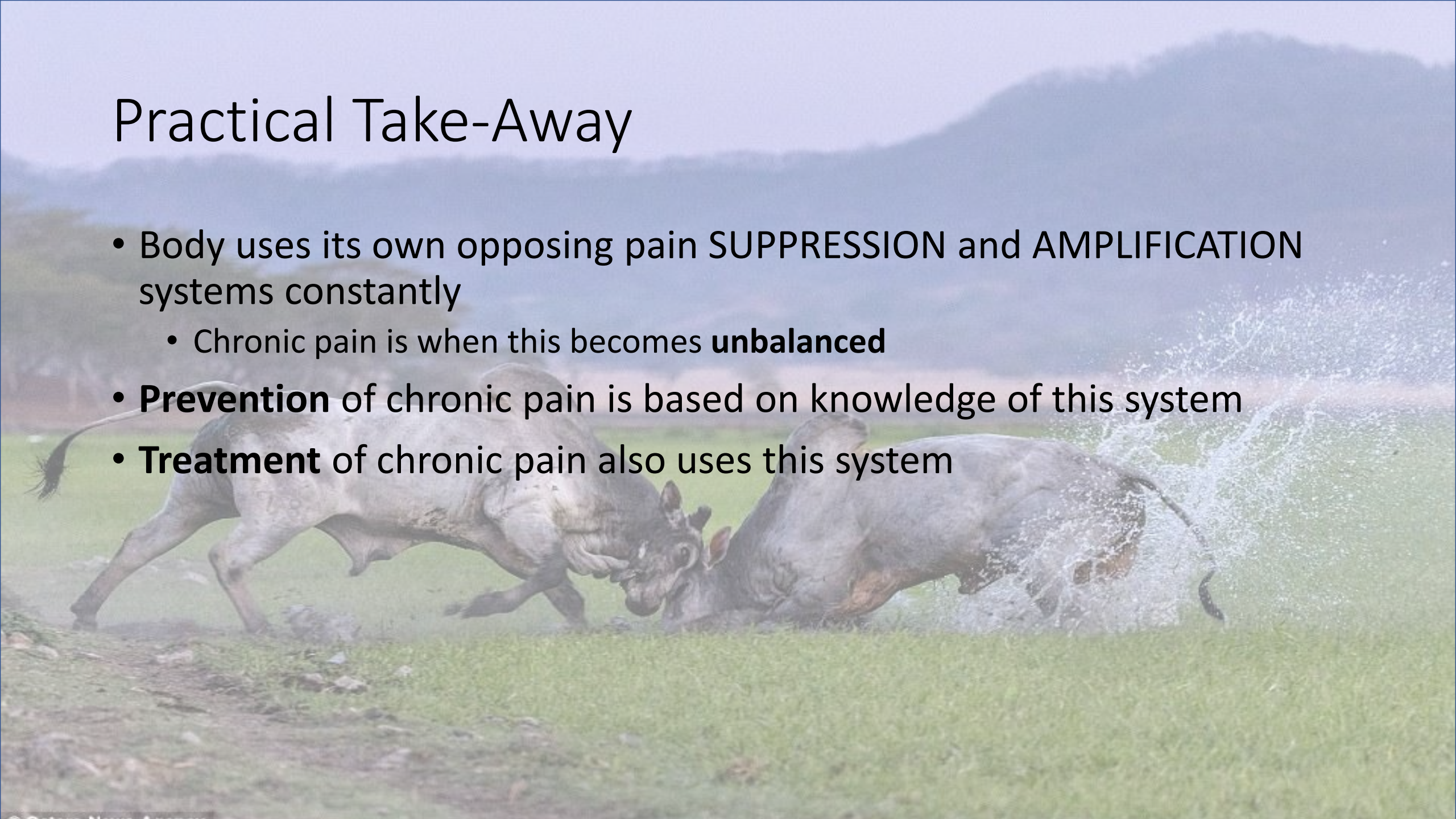


How is pain
adjusted?



Practical Take-Away

- Body uses its own opposing pain SUPPRESSION and AMPLIFICATION systems constantly
 - Chronic pain is when this becomes **unbalanced**
- **Prevention** of chronic pain is based on knowledge of this system
- **Treatment** of chronic pain also uses this system



(PAIN)
PREVENTION
PARADIGM

PAIN Prevention Paradigm

Prevention

Anti-inflammatory drugs

Individualize

Narcotics

PAIN Prevention Paradigm

- Evidence-Based
- Post-Op Pain ← delay
- Acute Post-Op Pain/Inflammation (first 2-3 days)
↑ minimize





ADA Policy on Opioid Prescribing (2018)

- “Supports mandatory continuing education in prescribing opioids and other controlled substances, with an emphasis on preventing drug overdoses, chemical dependency, and diversion. Any such mandatory CE requirements should:
 - Provide for continuing education credit that will be acceptable for both DEA registration and state dental board requirements,
 - Provide for coursework tailored to the specific needs of dentists and dental practice,
 - Include a phase-in period to allow affected dentists a reasonable period of time to reach compliance”
- “Supports statutory limits on opioid dosage and duration of no more than seven days for the treatment of acute pain, consistent with Centers for Disease Control and Prevention (CDC) evidence-based [guidelines](#), and be it further
- “Supports improving the quality, integrity, and interoperability of state prescription drug monitoring programs.”

CDA Opioid Policy 2019

“Dentists have a professional responsibility to reduce the misuse and abuse of opioids... CDA will continue to ...reduce reliance on opioids for dental pain management and to minimize minors’ first exposure to opioids...promote the use of prescription drug monitoring programs, substance use disorder education, and enhanced collaboration between dentists and their medical colleagues to assist in identifying a patient’s full medication profile and potential substance use disorders prior to prescribing an opioid.

(PAIN)
PREVENTION

1. Prevention

PAIN Prevention Paradigm

Principles of Prevention



- The **longer** and **harder** the **acute** pain is, the **more likely** and **severe** the chronic pain
- **Prevention** by reduction/shortening/eliminating acute pain

Prevention Principles

Be Proactive and Aggressive Against Pain

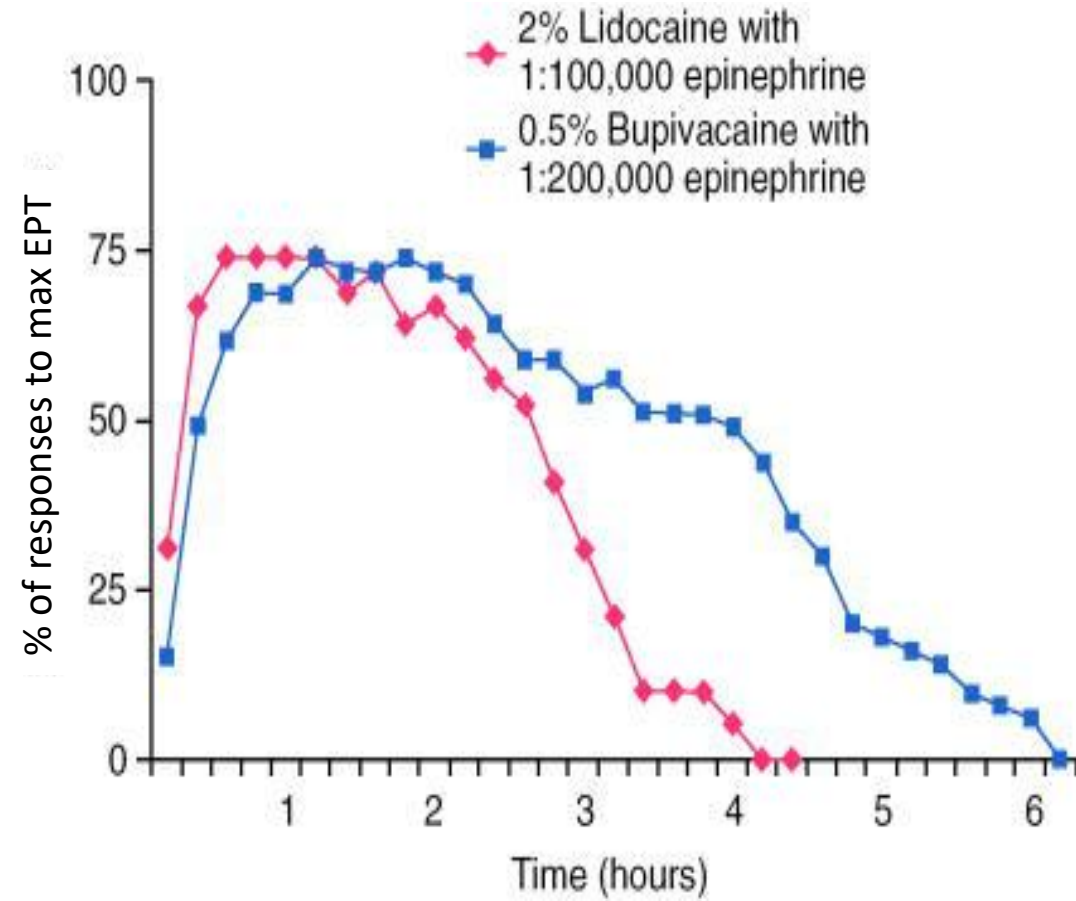
An ounce of prevention is worth a pound of treatment

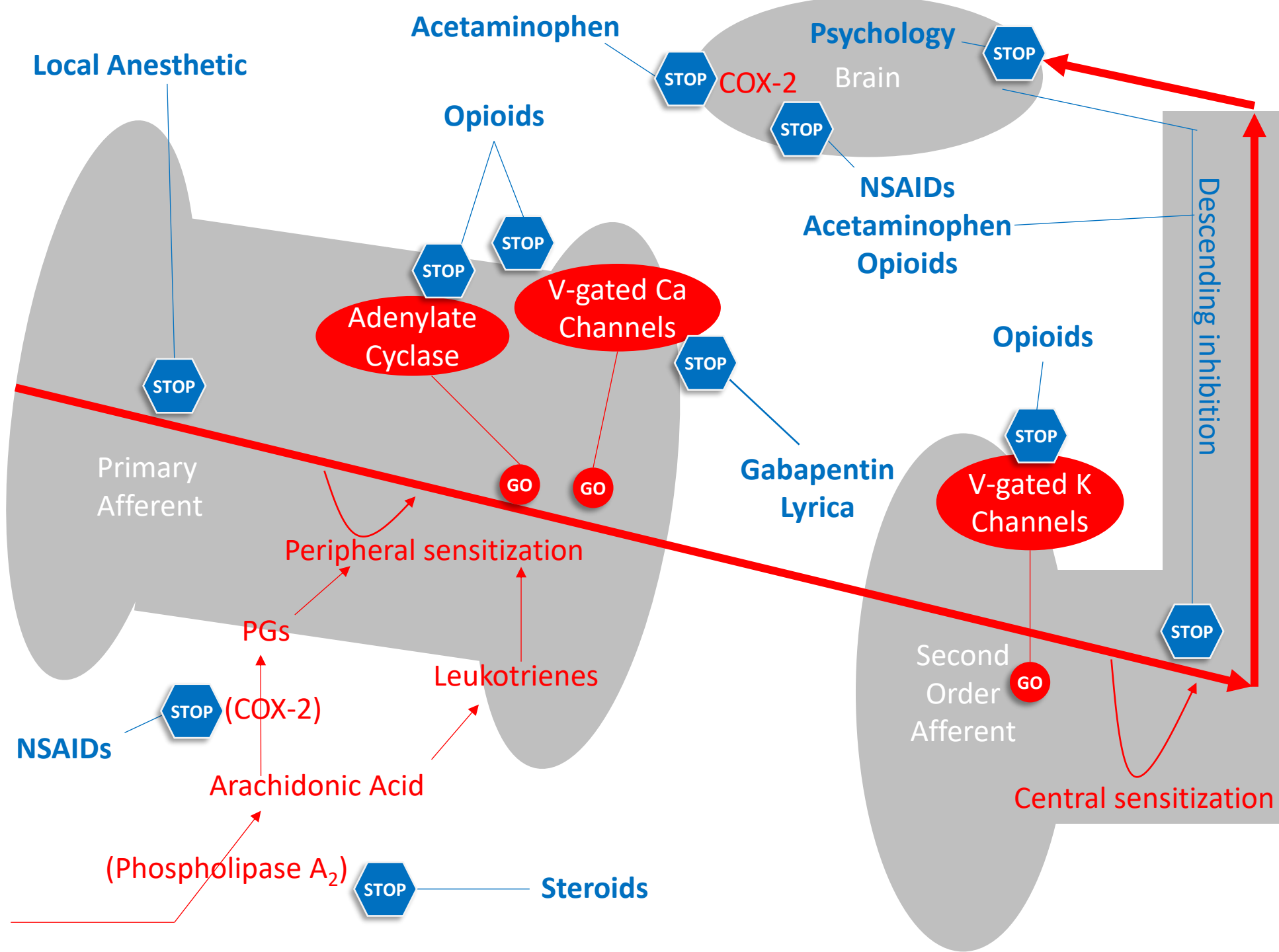
More is less

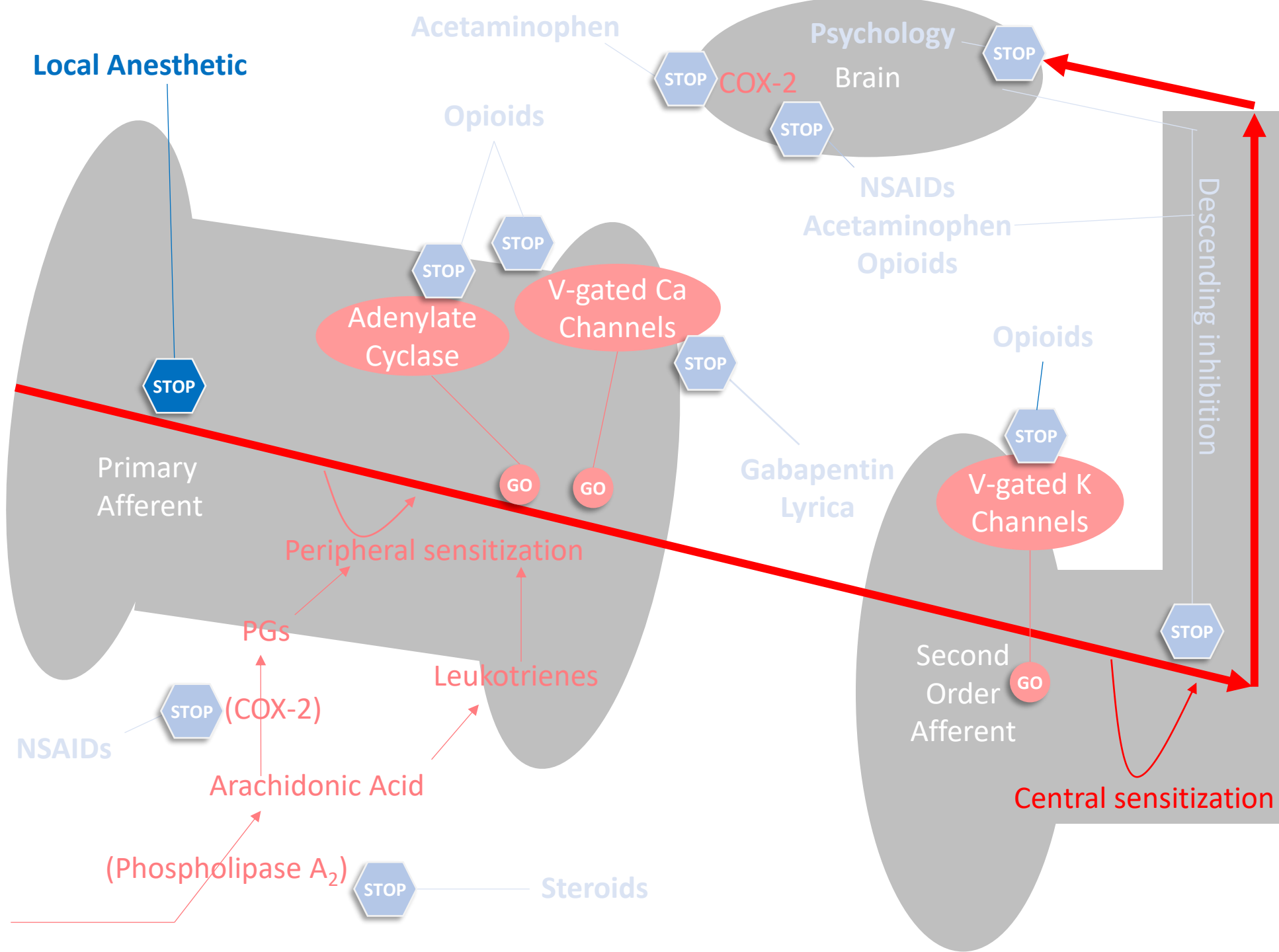
- “I don’t like taking medication.”
 - If this gets out of control, you’ll be taking
 - Stronger medication
 - Higher doses
 - Longer time

Prevention by Local Anesthetic

- Study: **Long-acting** local anesthetic (Duranest, 5-10 hour duration of action, no longer on market)
 - **Less pain** in first **4-8 hours** post-op
 - Compared to Lido with epi
 - Less pain **48 hours** post-op
- Alternatives
 - Marcaine (bupivacaine)
 - Higher CNS toxicity and cardio events incidence
 - Slower onset than lidocaine
 - Lidocaine at end of procedure

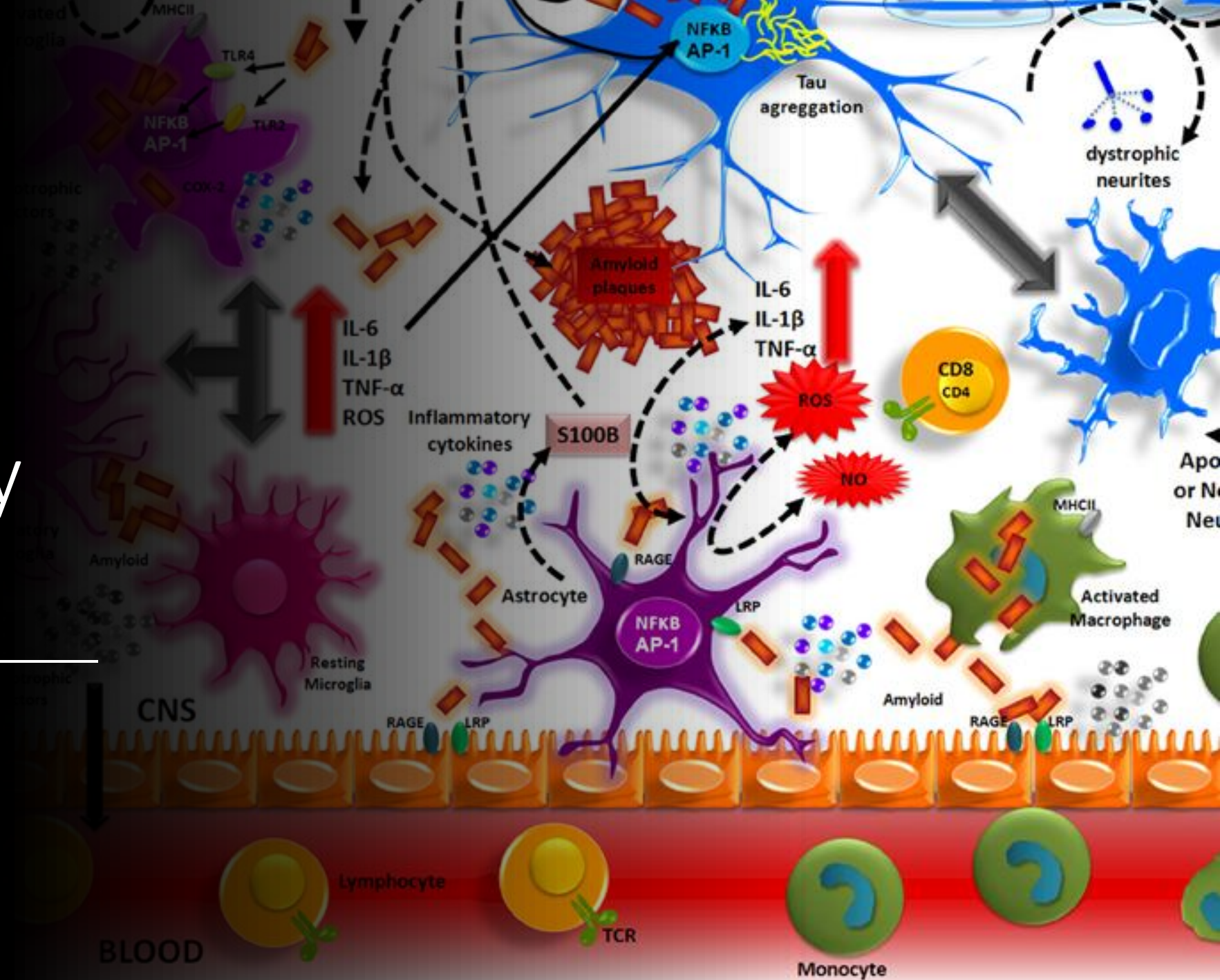






	Post-op Anesthesia	NSAIDs	Steroids	Acetaminophen	Opioids
Anti-inflammatory	None	Good	Excellent	None	None
Peripheral Analgesia	Complete	Yes	None	None	Yes
Central Analgesia	N/A	Yes	None	Yes	Yes
Analgesic Ceiling	None	Yes	N/A	Yes	No
Anti-inflam Ceiling	N/A	Yes	No	N/A	N/A
Tolerance	NS	NS	NS	NS	Pronounced
Dependence	None	None	Possible	None	Yes
Addictive	None	None	Possible	None	Yes
Controlled	None	None	None	None	Yes

Prevention by NSAID



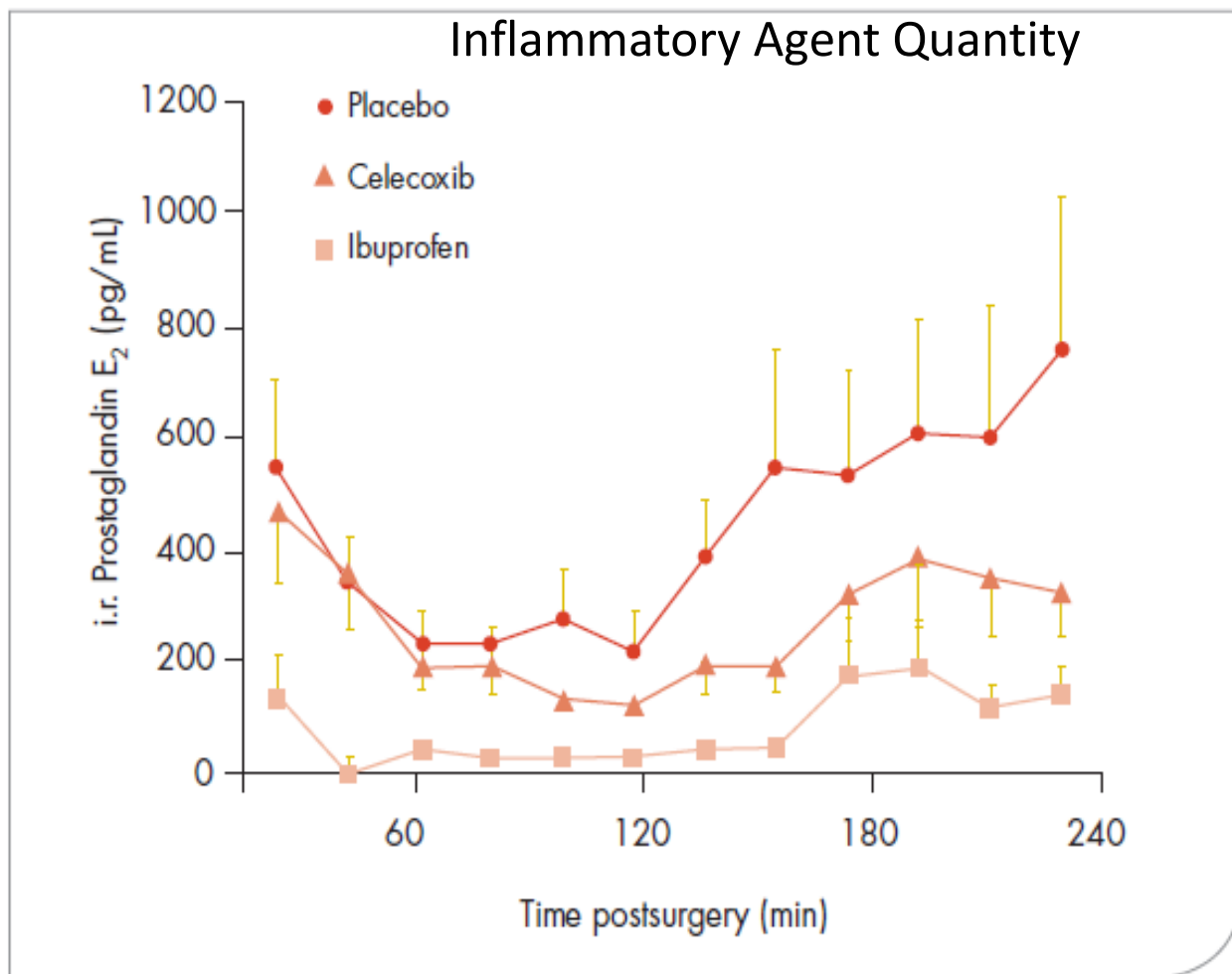


FIGURE 3A.

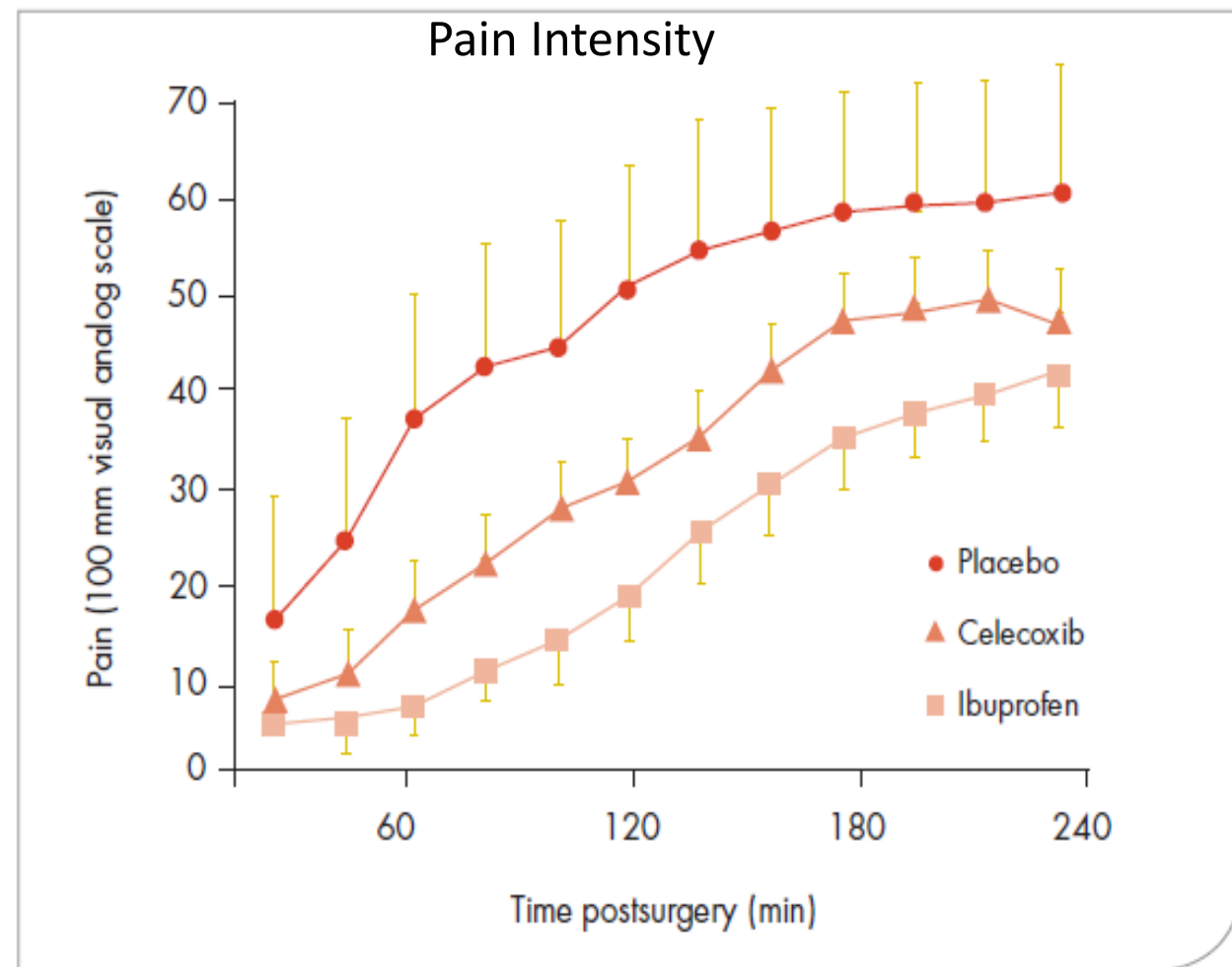


FIGURE 3B.

Ibuprofen 400 mg & Celebrex 50 mg given 8 hours and 1 hour prior to impacted third molar extraction

Measurements taken every 20 minutes for 4 hours

Prevention by NSAID

More studies in support than for steroids¹

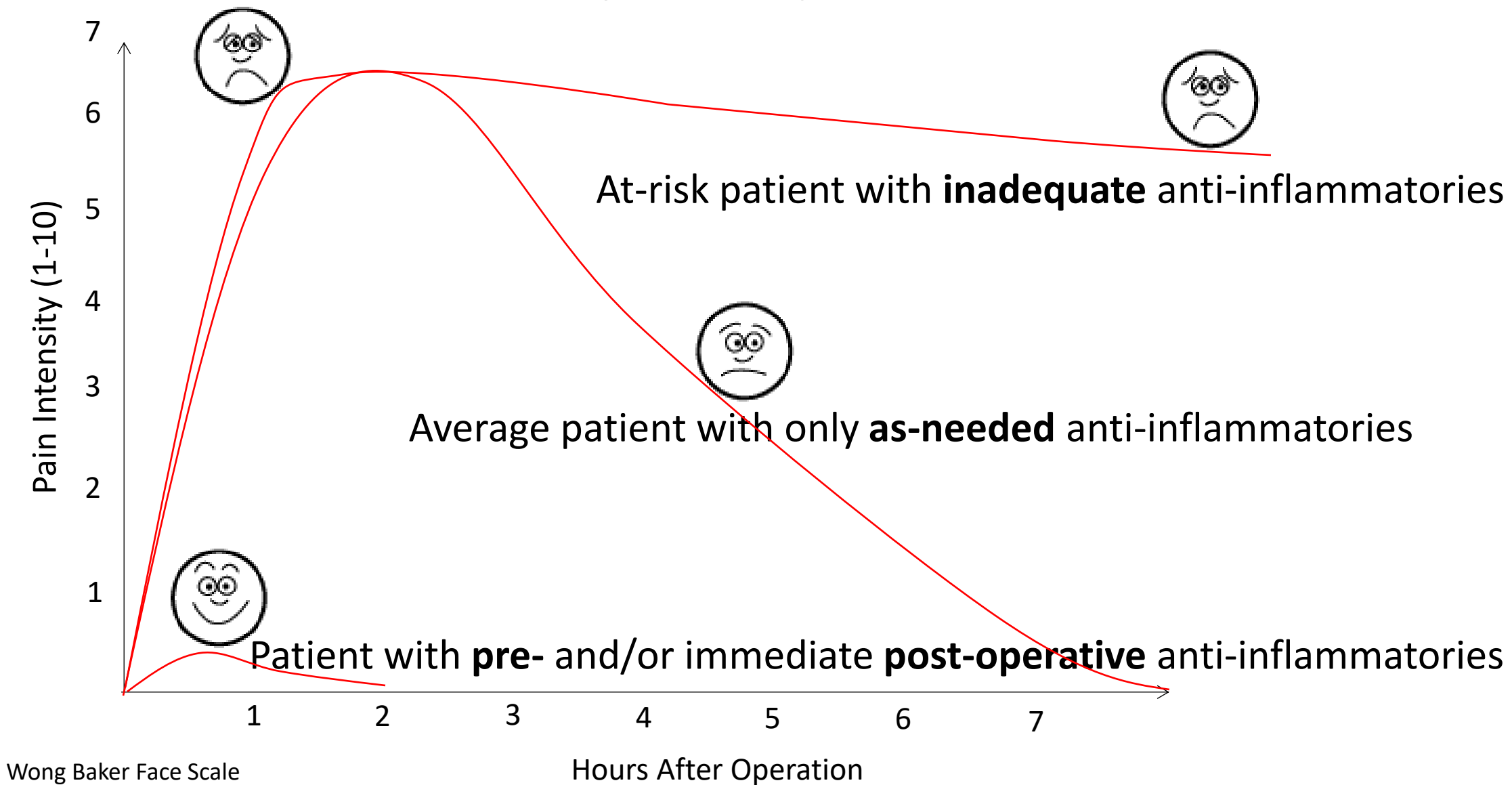
NSAIDs prevent synthesis of prostaglandins

- They don't destroy PGs that already formed





Prevention via the Trajectory



Prevention by NSAID

Pre-Op or Immediately Post-Op

- Equally effective

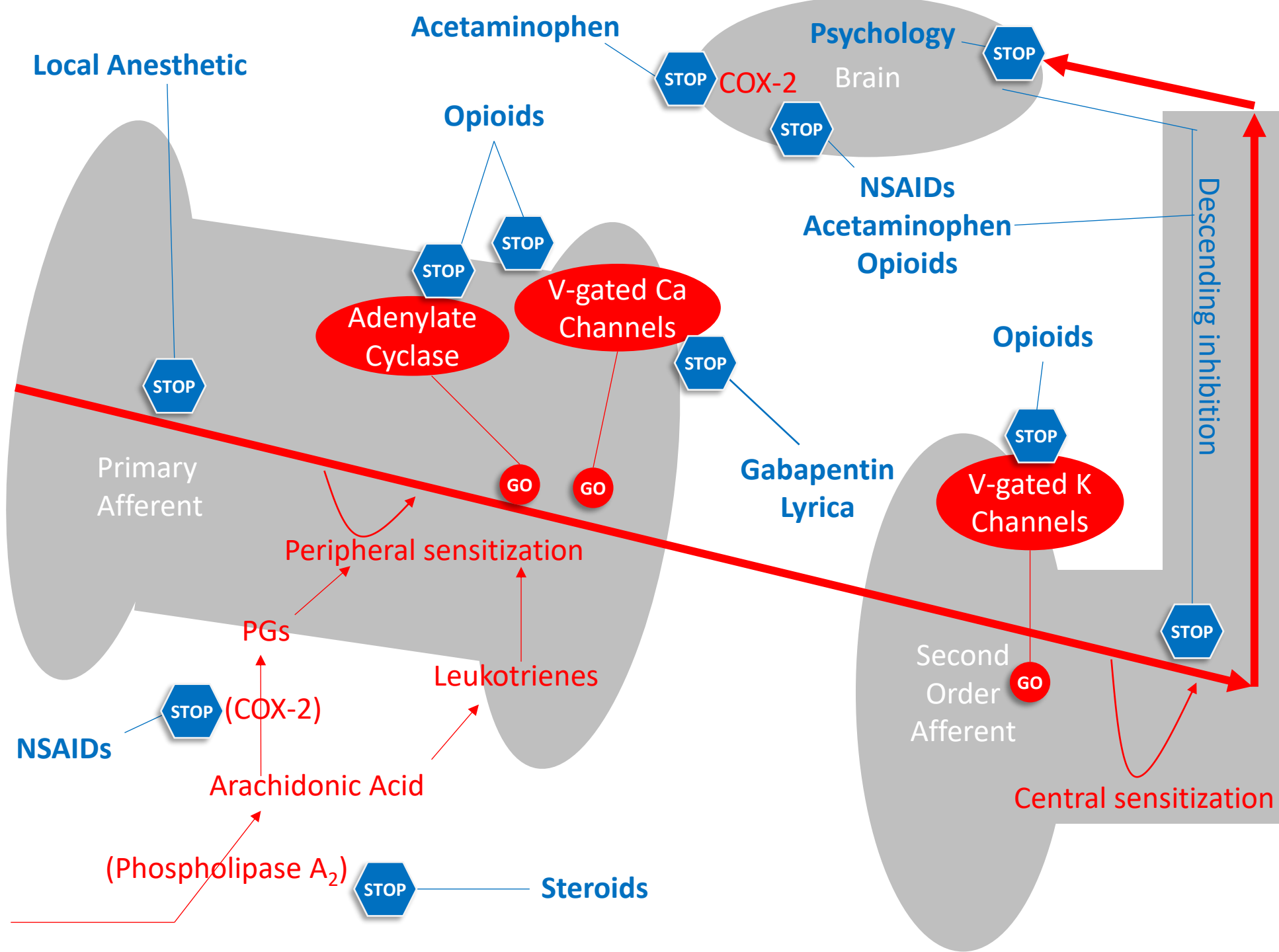
Results in less pain during first 4-8 hours

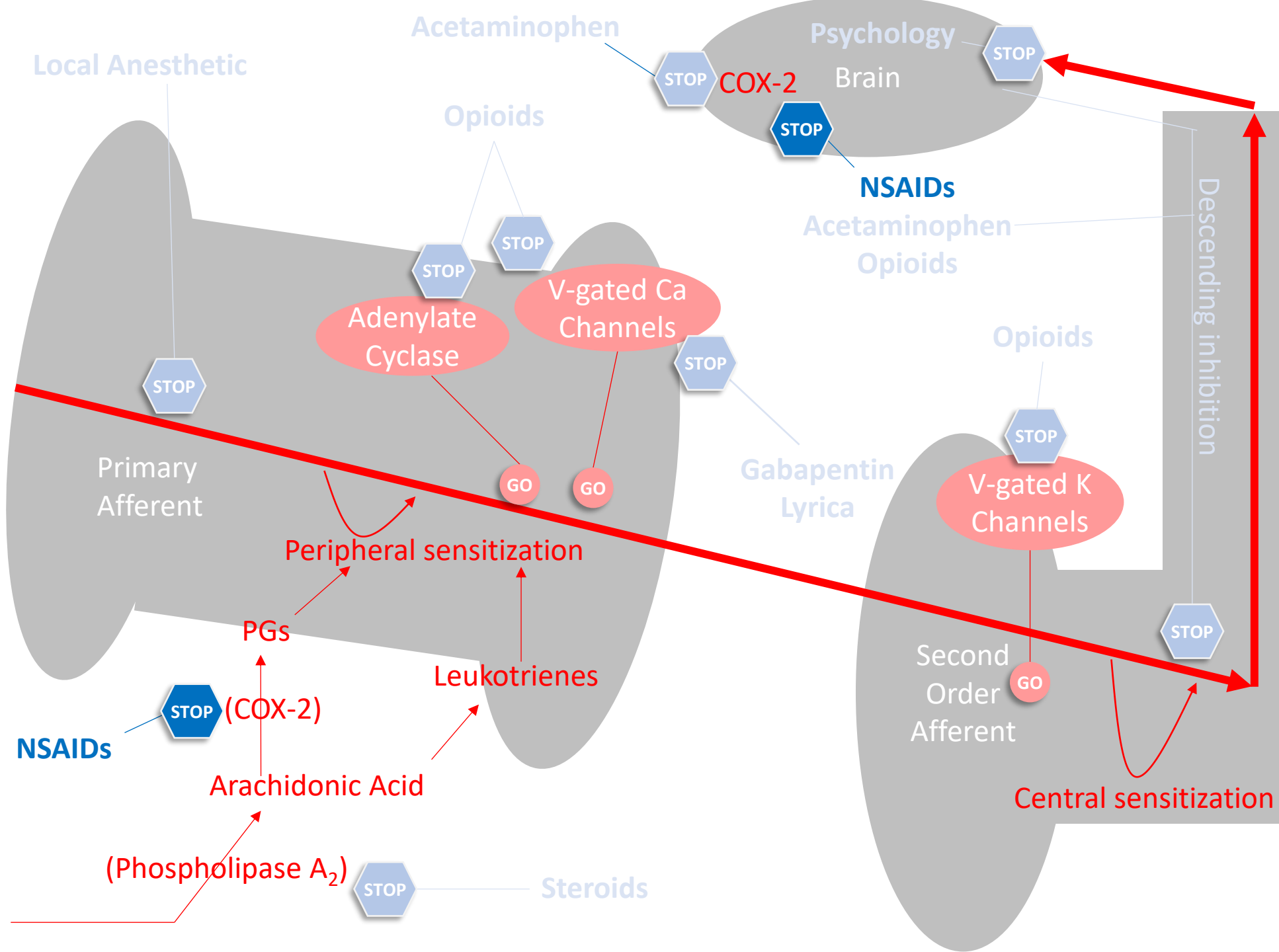
More effective* than

- Acetaminophen given pre- and post-operatively
- Acetaminophen & codeine 60 mg post-operatively

Prevention by
NSAID

In clotting
disorders or with
anticoagulants,
use
acetaminophen
instead

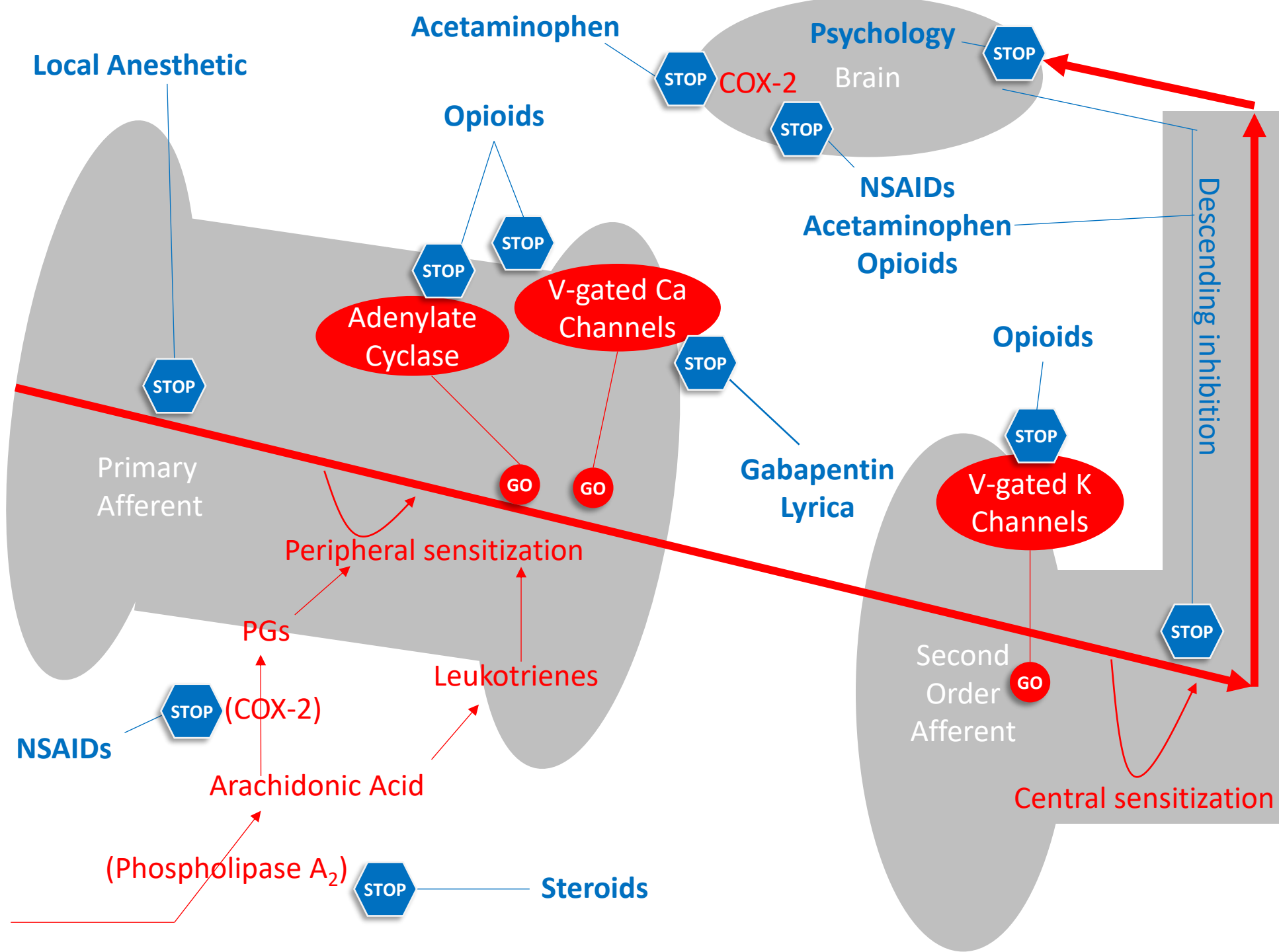


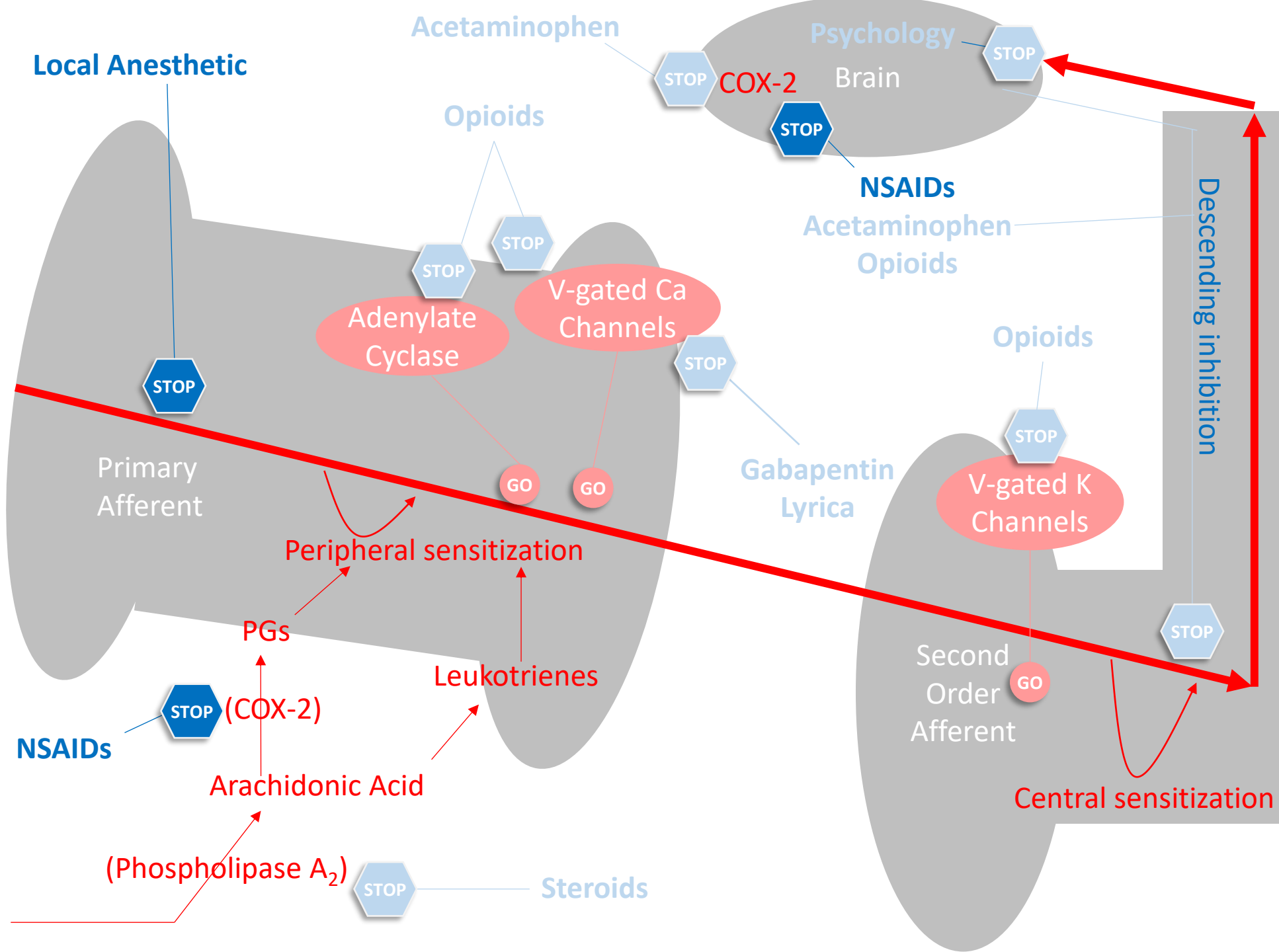


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Anti-inflammatory	None	Good	Excellent	None	None
Peripheral Analgesia	Complete	Yes	None	None	Yes
Central Analgesia	N/A	Yes	None	Yes	Yes
Analgesic Ceiling	None	Yes	N/A	Yes	No
Anti-inflam Ceiling	N/A	Yes	No	N/A	N/A
Tolerance	NS	NS	NS	NS	Pronounced
Dependence	None	None	Possible	None	Yes
Addictive	None	None	Possible	None	Yes
Controlled	None	None	None	None	Yes

Prevention by NSAID and Long-Acting Anesthetic

- **Additive** Effect
- **NSAIDs** prevent **synthesis** of prostaglandins, and **sensitization**
- **Anesthetic** prevents **sensitization**





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Anti-inflammatory	None	Good	Excellent	None	None
Peripheral Analgesia	Complete	Yes	None	None	Yes
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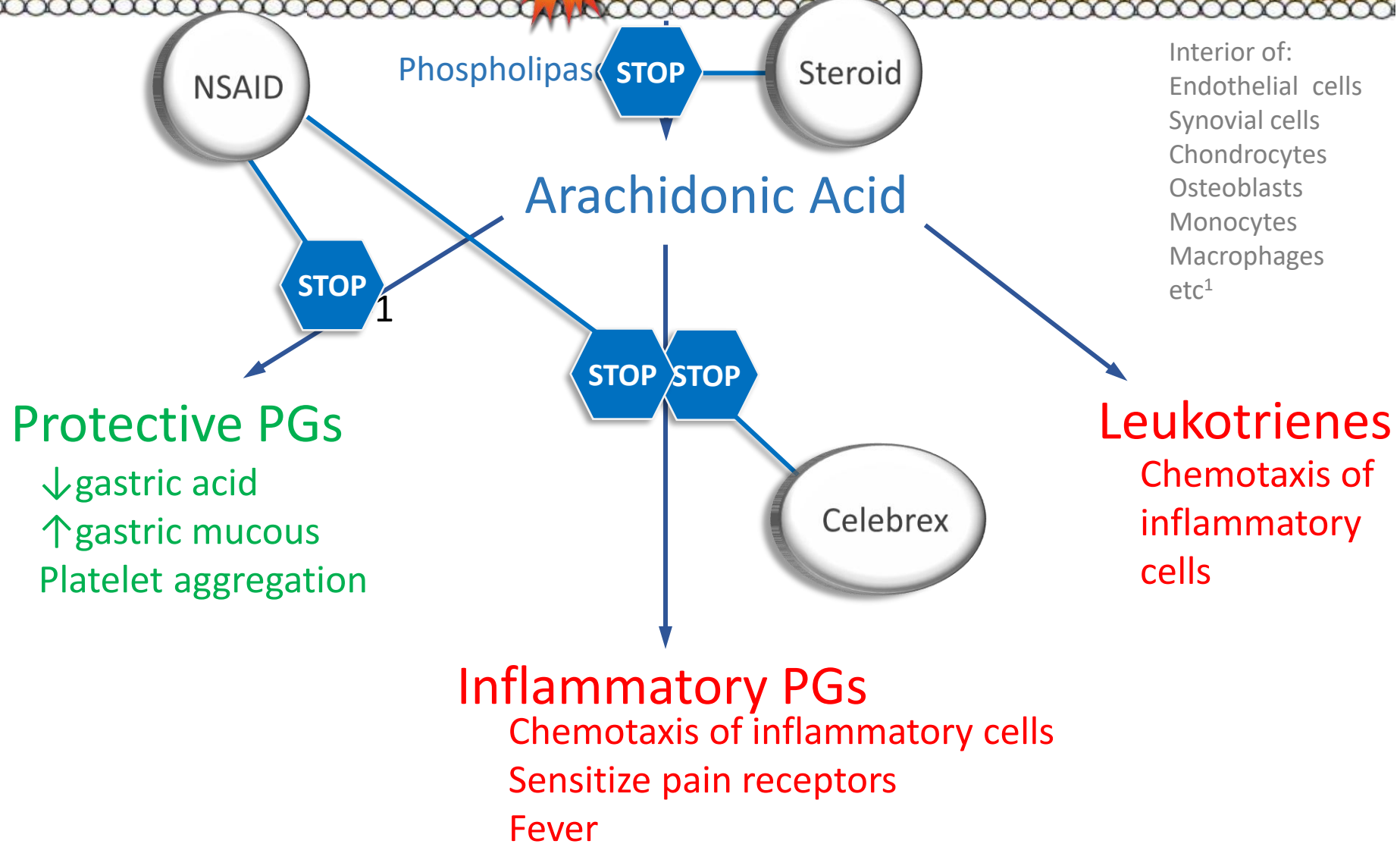
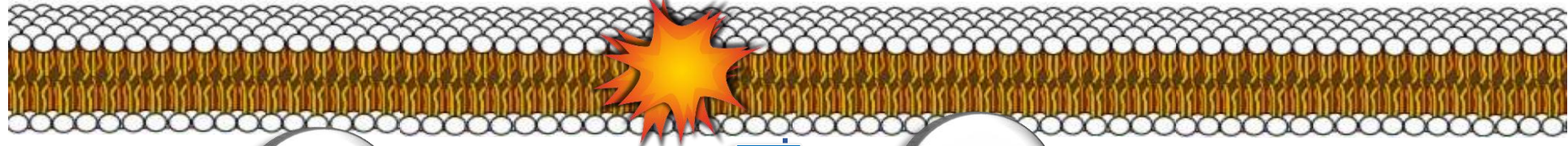
(PAIN) ANTI-
INFLAMMATORY
DRUGS

2. Anti-Inflammatory Drugs

Use them more

Use them better

PAIN Prevention Paradigm



Advantages to NSAIDs

- Inhibit the **inflammatory** process that leads to persistent pain (opioids do not)
 - While also providing **analgesia**
 - **Peripherally**
 - **Centrally**

Advantages of NSAIDs

Non-addicting

Fewer side effects than steroids and opioids at therapeutic doses for several weeks to months of use

Not a controlled substance



No Single NSAID is in general superior to others

- **Varies** by individual
- **Allow 2-3 days** at optimal dosing before switching NSAID



Maximums:
 APAP 3000
 Aspirin 4000
 Ibuprofen 3200
 Naproxen Na 1100
 Naproxen 1000
 Tramadol 400
 Diclofenac 100
 Celecoxib 200*
 Ketorlac 40
 Piroxicam 20

*Max not given, so based on highest recommended

Lexicomp ↑

<http://www.bandolier.org.uk/booth/painpag/Acutrev/Analgesics/Leagtab.html> →

	% w/at least 50% pain relief	NNT	Lower CI	Higher CI	# patients
Diclofenac 100	69	1.8	1.6	2.1	545
Celecoxib 400	52	2.1	1.8	2.5	298
APAP 1000 Codeine 60	57	2.2	1.7	2.9	197
Aspirin 1200	61	2.4	1.9	3.2	279
Ibuprofen 400	55	2.5	2.4	2.7	5456
APAP 650 Oxycodone IR 10	66	2.6	2.0	3.5	315
Diclofenac 25	53	2.6	2.2	3.3	502
Ketorlac 10	50	2.6	2.3	3.1	790
Naproxen 400/440	51	2.7	2.1	4.0	197
Piroxicam 20	63	2.7	2.1	3.8	280
Naproxen 500/550	52	2.7	2.3	3.3	784
Diclofenac 50	57	2.7	2.4	3.1	1296
Ibuprofen 200	48	2.7	2.5	2.9	3248
Tramadol 150	48	2.9	2.4	3.6	561
Morphine 10 (IM)	50	2.9	2.6	3.6	946
Naproxen 200/220	45	3.4	2.4	5.8	202
Ketorlac 30 (IM)	53	3.4	2.5	4.9	359
APAP 500	61	3.5	2.2	13.3	561
Celecoxib 200	40	3.5	2.9	4.4	805
Ibuprofen 100	40	3.7	2.9	4.9	495
APAP 1000	46	3.8	3.4	4.4	2759
APAP 600/650 Codeine 60	42	4.2	3.4	5.3	1123
Aspirin 600/650	38	4.4	4.0	4.9	5061
Ibuprofen 50	32	4.7	3.3	8.0	316
Tramadol 100	30	4.8	3.8	6.1	882
Tramadol 75	32	5.3	3.9	8.2	563
Aspirin 650 Codeine 60	25	5.3	4.1	7.4	598
APAP 300 Codeine 30	26	5.7	4.0	9.8	379
Tramadol 50	19	8.3	6.0	13.0	770
Codeine 60	15	16.7	11.0	48.0	1305

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 Aspirin 4000
 Ibuprofen 3200
 Naproxen Na 1100
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 Tramadol 400
 Diclofenac 100
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Tramadol 50	19	8.3	6.0	13.0	770
Codeine 60	15	16.7	11.0	48.0	1305

Codeine does not improve much over low dose ibuprofen

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 Aspirin 4000
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 Naproxen Na 1100
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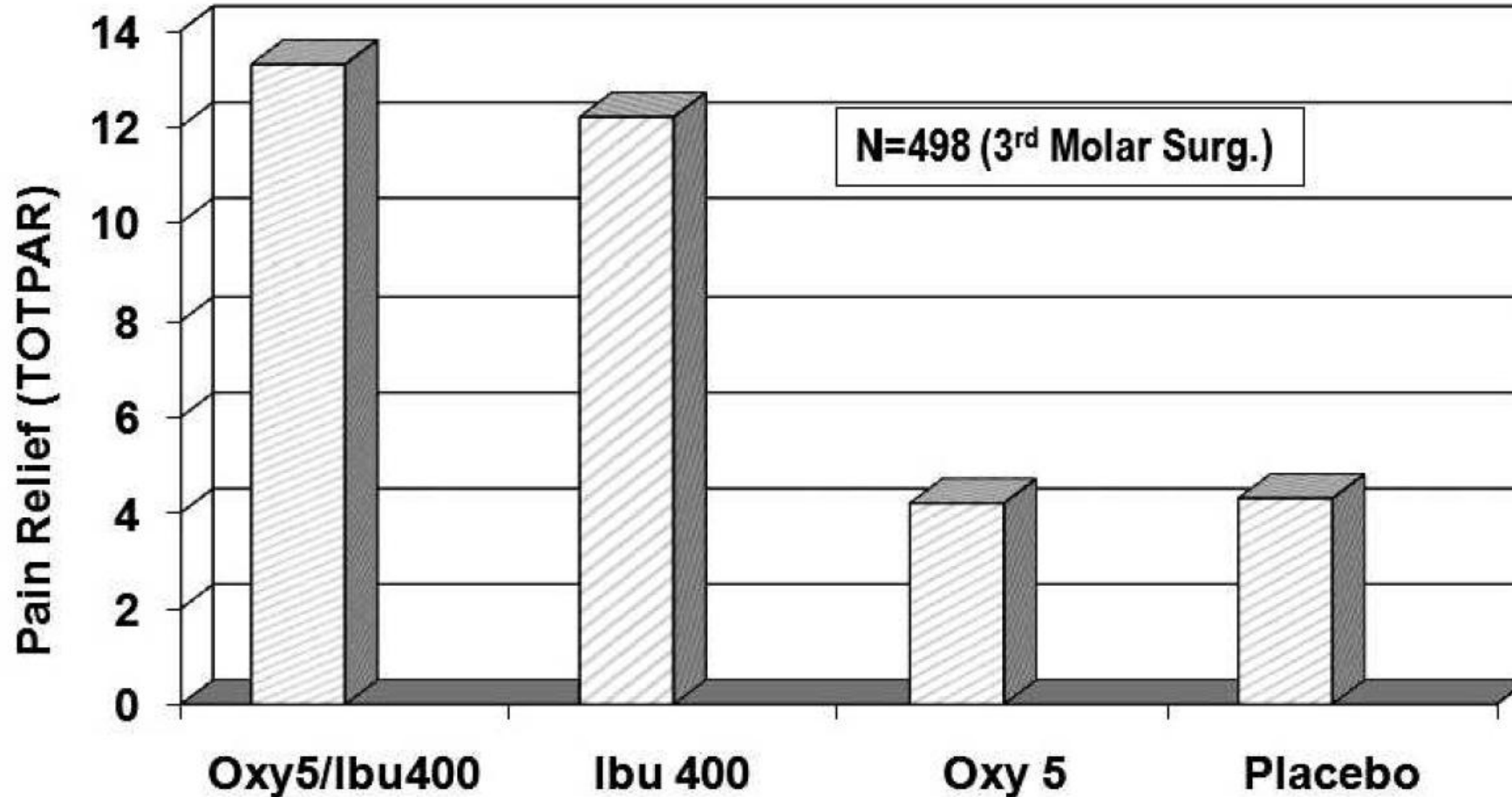
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APAP 600/650 Codeine 60	42	4.2	3.4	5.3	1123
Aspirin 600/650	38	4.4	4.0	4.9	5061
Ibuprofen 50	32	4.7	3.3	8.0	316
Tramadol 100	30	4.8	3.8	6.1	882
Tramadol 75	32	5.3	3.9	8.2	563
Aspirin 650 Codeine 60	25	5.3	4.1	7.4	598
APAP 300 Codeine 30	26	5.7	4.0	9.8	379
Tramadol 50	19	8.3	6.0	13.0	770
Codeine 60	15	16.7	11.0	48.0	1305

Ibuprofen has a long and large track record

NSAIDs Are Comparable to Opioids at Conventional Doses



No difference
between
NSAIDs and
Narcotics in
pain-related
function over
12 months

- Moderate to severe chronic back pain or hip or knee osteoarthritis pain
- **Opioid group:** immediate-release morphine, oxycodone, or hydrocodone/acetaminophen.
- **Nonopioid group:** acetaminophen, NSAID
- Medications were changed, added, or adjusted within the assigned treatment group according to individual patient response

- Krebs EE, Gravelly A, Nugent S, et al. Effect of Opioid vs Nonopioid Medications on Pain-Related Function in Patients With Chronic Back Pain or Hip or Knee Osteoarthritis Pain: The SPACE Randomized Clinical Trial. *JAMA*. 2018;319(9):872–882.

Analgesic/Antipyretic vs Anti-inflammatory (Ibuprofen example)

Analgesic / Antipyretic

- May occur at 200-400 mg

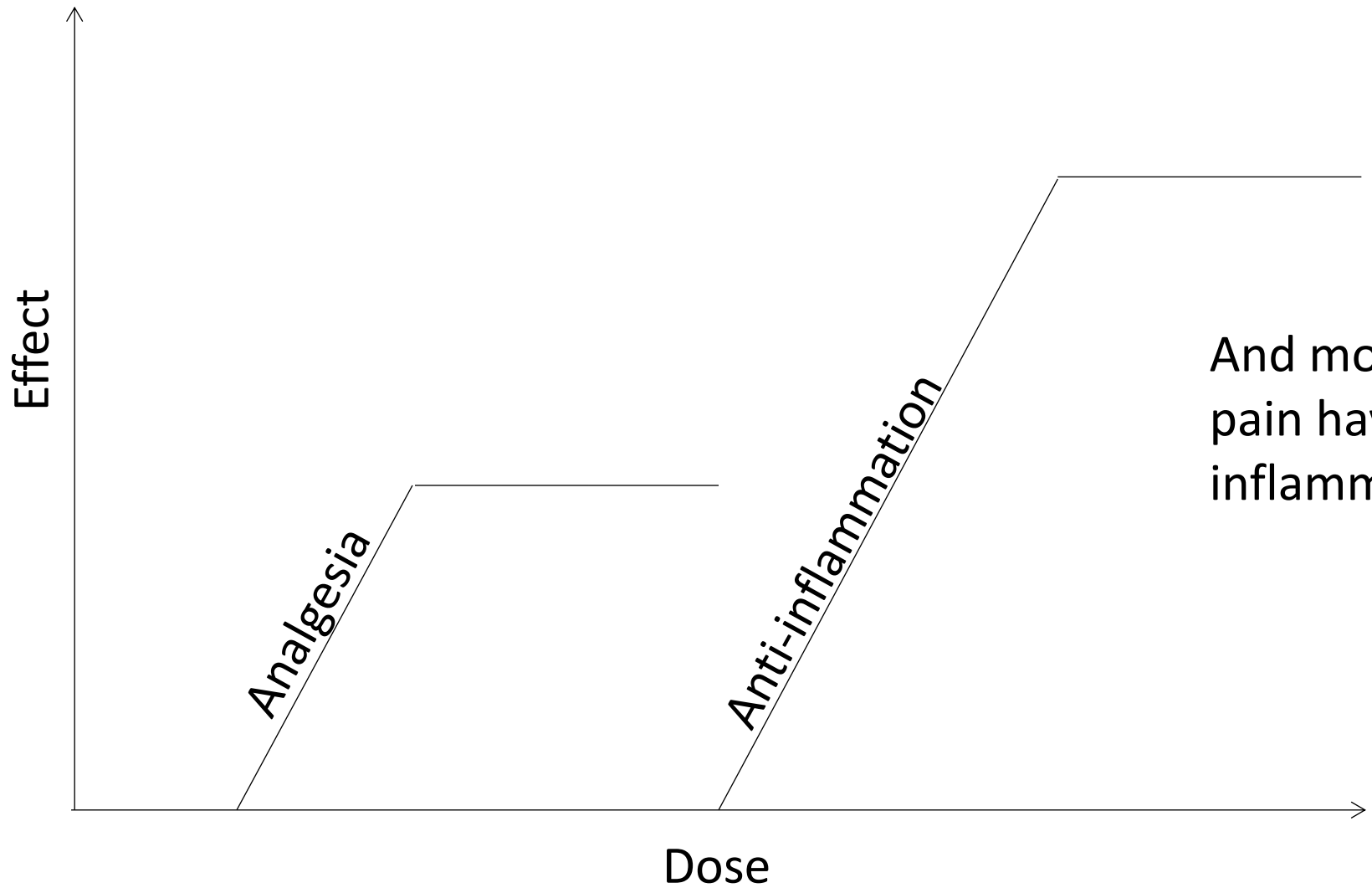


Anti-inflammatory

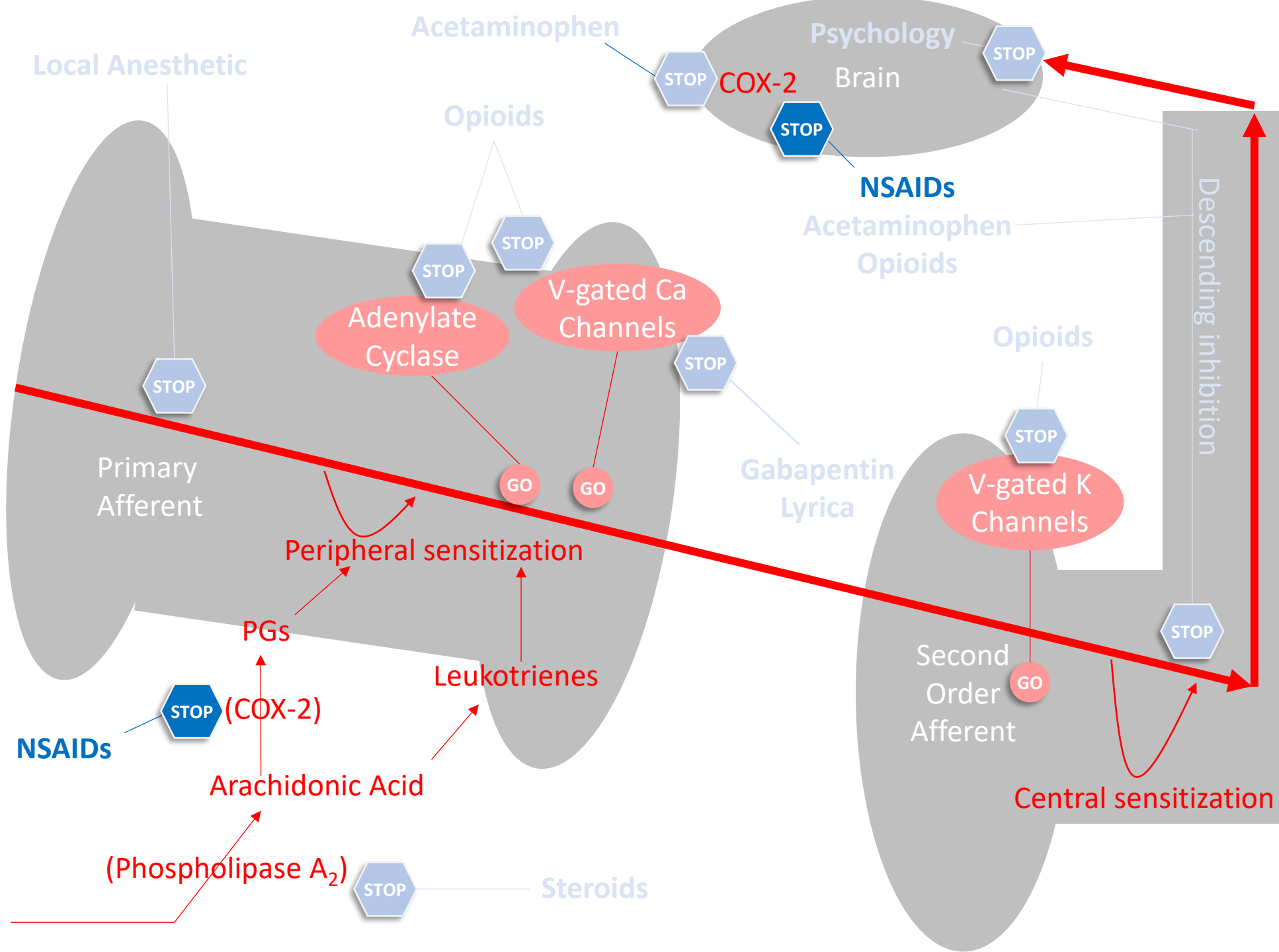
- May occur at 1600/2400 mg/day



Analgesia vs Anti-inflammation



And most cases of dental pain have at least some inflammation



	Post-op Anesthesia	NSAIDs	Steroids	Acetaminophen	Opioids
Anti-inflammatory	None	Good	Excellent	None	None
Peripheral Analgesia	Complete	Yes	None	None	Yes
Central Analgesia	N/A	Yes	None	Yes	Yes
Analgesic Ceiling	None	Yes	N/A	Yes	No
Anti-inflam Ceiling	N/A	Yes	No	N/A	N/A
Tolerance	NS	NS	Possible	NS	Pronounced
Dependence	None	None	Possible	None	Yes
Addictive	None	None	Possible	None	Yes
Controlled	None	None	None	None	Yes



NSAIDs Are First-Line Treatment for Acute Dental Pain

AAOMS White Paper 2020

Opioid Prescribing: Acute and Postoperative Pain Management

- “Avoid starting treatment with long-acting or extended-release opioid”
- “NSAIDs as first-line analgesic therapy, unless contraindicated. If NSAIDs are contraindicated, providers should prescribe acetaminophen as first-line analgesic therapy”

Short Term Steroid Use

Pre-Op Steroids Reduce Post-Op Pain

Fewer studies than for NSAIDs, but all agree¹

Ex: Dexamethasone 4-8 mg orally

1. Aminoshariae A et al, JADA 2016

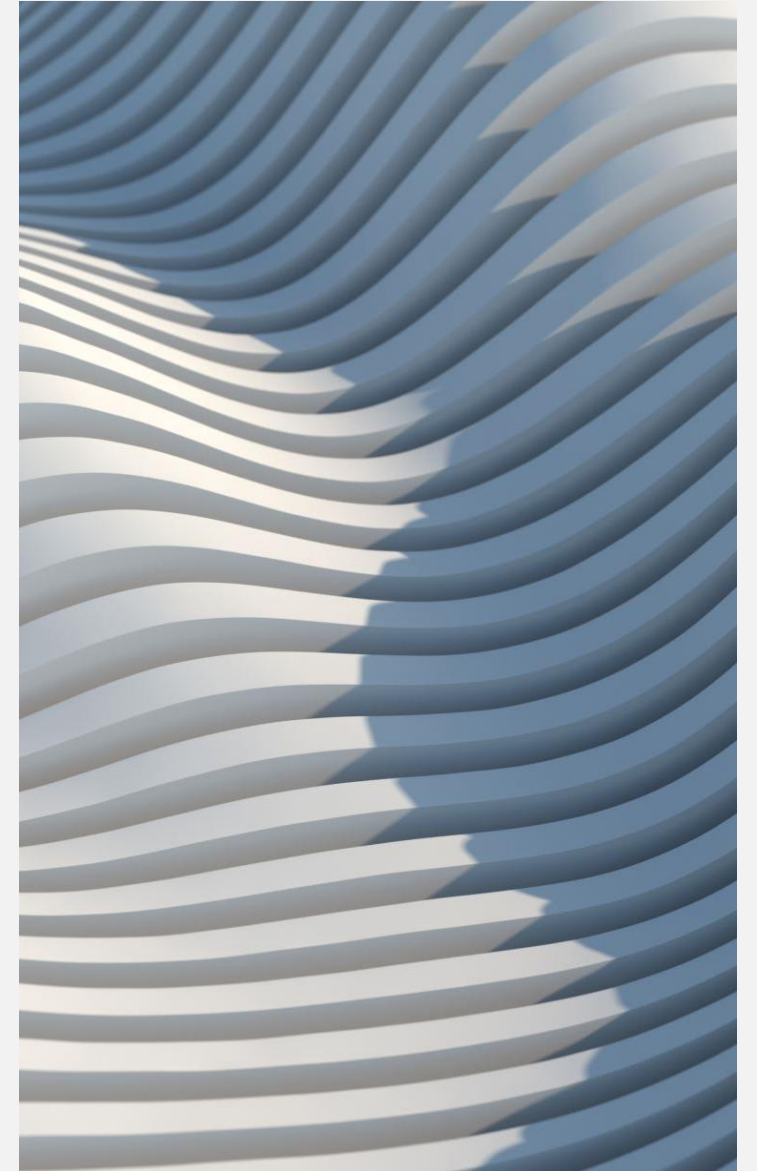
Gallatin E et al, J Endod 2000

Lin S et al, OOOOE 2006

Pochapski MT, OOOOE 2009

Post-Op Steroids Reduce Post-Op Pain

Ex: Dexamethasone
4 mg up to 3 times
in 24 hours was
effective



Aminoshariae A et al, JADA 2016

Glassman G et al, OOO 1989



Safety

1 week of steroid (under 600 mg prednisone total), in the absence of specific contraindications, is unlikely to cause any harm

- Psychotic or prepsychotic episodes excepted
- Medrol 4mg Dosepak = 105 mg prednisone

Dosage Directions

To remove tablet, press from this side directing pressure on either end of tablet.

1st day

Take 2 tablets before breakfast, 1 tablet after lunch and after supper, and 2 tablets at bedtime.

2nd day

Take 1 tablet before breakfast, 1 tablet after lunch and after supper, and 2 tablets at bedtime.

3rd day

Take 1 tablet before breakfast and 1 tablet after lunch, after supper, and at bedtime.

4th day

Take 1 tablet before breakfast, after lunch, and at bedtime.

5th day

Take 1 tablet before breakfast and at bedtime.

6th day

Take 1 tablet before breakfast.

**MethylPREDNISolone
Tablets, USP**

4 mg Unit of Use

Unless otherwise directed by your physician, all six (6) tablets in the row labeled 1st day should be taken the day you receive your prescription, even though you may not receive it until late in the day. All six (6) tablets may be taken immediately as a single dose, or may be divided into two or three doses and taken at intervals between the time you receive the medicine and your regular bedtime.



Revised: 02-2022-00

Methylprednisolone (Medrol Dosepak) for acute pain

4.5 mg dexamethasone = 24 mg methylprednisolone

15.8 mg dexamethasone = 84 mg methylprednisolone

Day	Before Breakfast	After Lunch	After Dinner	Bedtime
1	8	4	4	8
2	4	4	4	8
3	4	4	4	4
4	4	4		4
5	4			4
6	4			

If pack received late in the day on Day 1, still take all tablets. It is safe to take all at once, or if time allows, divided

	Equivalent to ____ hydrocortisone for anti-inflammation	Half-life (hours)
Short acting		
Hydrocortisone	1	8-12
Cortisone	0.8	8-12
Intermediate acting		
Prednisone	4	12-36
Prednisolone	4	12-36
Methylprednisolone	5	12-36
Long acting		
Dexamethasone	30	36-54

PrednisoLONE (PO)

PredniSONE (PO)

Triamcinolone (IV)

Drug Dosage in mg

12

mg

Converting To:

Betamethasone (IV)

Cortisone (PO)

Dexamethasone (IV or PO)

Hydrocortisone (IV or PO)

1.8 mg

Approximate **Dexamethasone (Decadron)** Equivalence to:

12mg of Prednisone

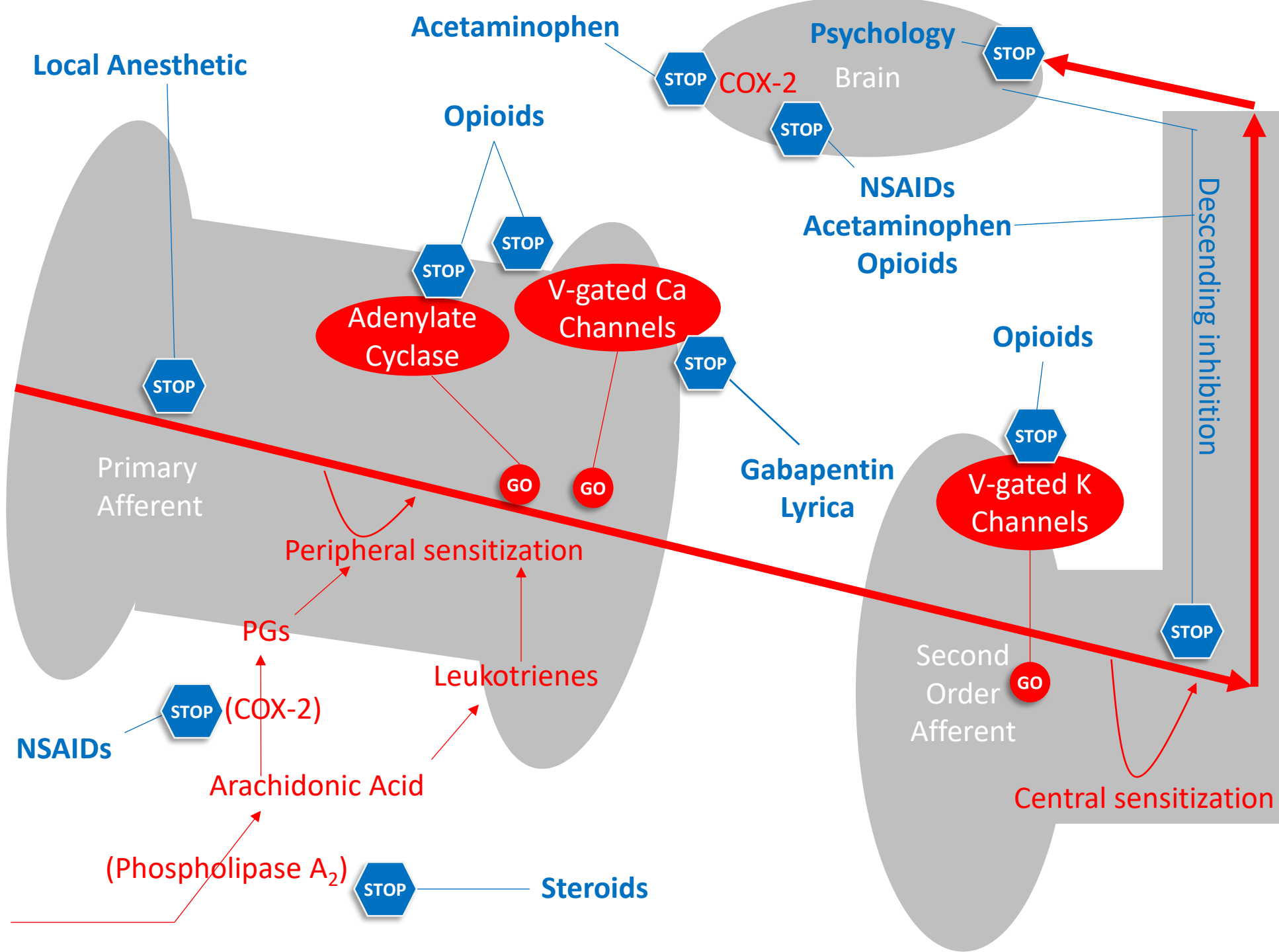
You are converting to a drug with a longer half-life, consider reducing dosing frequency.

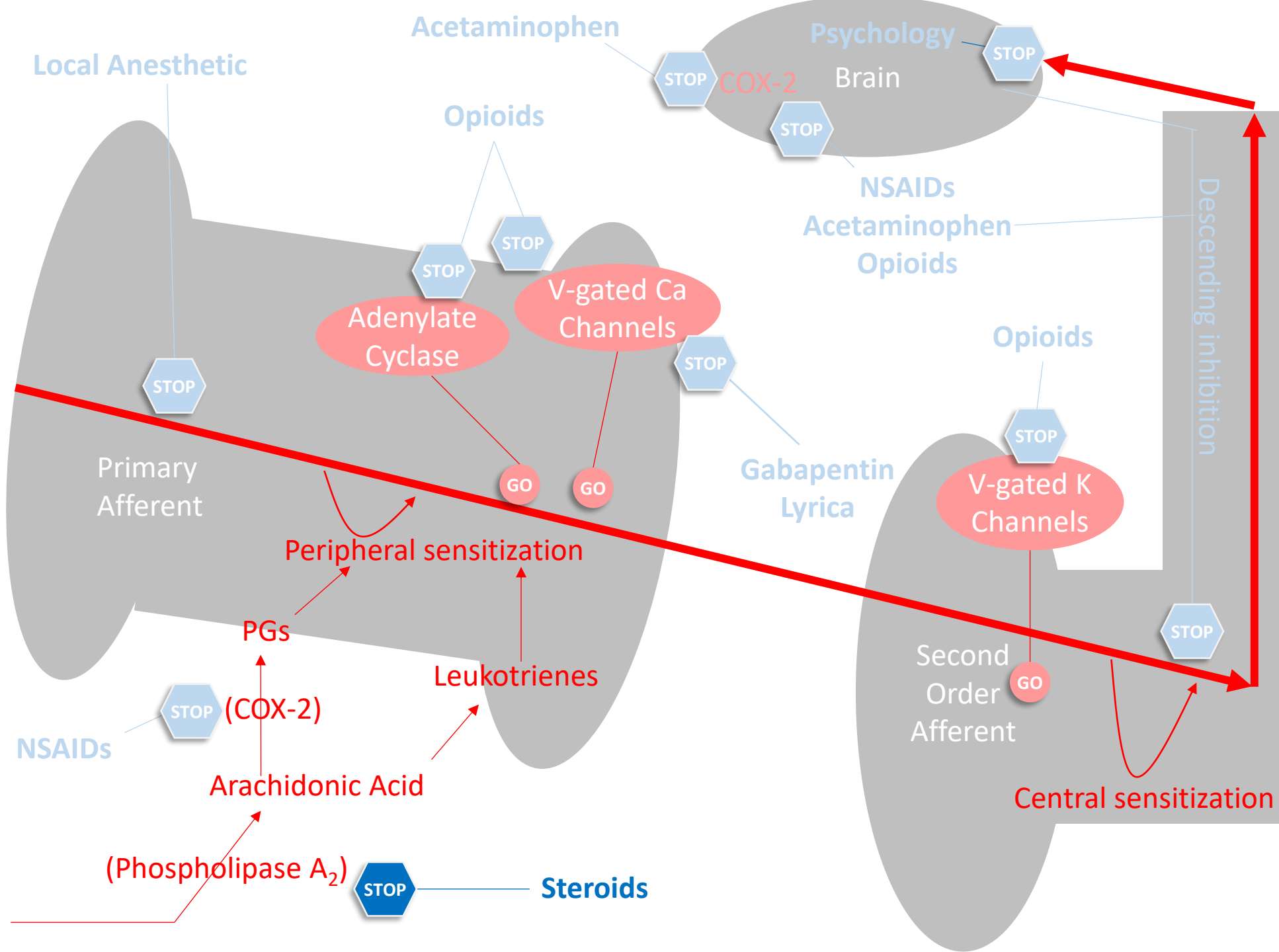
Copy Results 

Next Steps 

	Prednisone	Methylprednisolone	Dexamethasone
Effective (mg/d)	80	64	<u>12</u>
(mg/wk)	560	448	84
Safe (mg/wk)	<u>600</u>	480	90
Medrol 4mg Dosepak (mg total)	105	<u>84</u>	15.8

Summary of the previous slides. Original given amounts are underlined. Converted amounts are not underlined.





	Post-op Anesthesia	NSAIDs	Steroids	Acetaminophen	Opioids
Anti-inflammatory	None	Good	Excellent	None	None
Peripheral Analgesia	Complete	No	None	None	Yes
Central Analgesia	N/A	Yes	None	Yes	Yes
Analgesic Ceiling	None	Yes	N/A	Yes	No
Anti-inflam Ceiling	N/A	Yes	No	N/A	N/A
Tolerance	NS	NS	Possible	NS	Pronounced
Dependence	None	None	Possible	None	Yes
Addictive	None	None	Possible	None	Yes
Controlled	None	None	None	None	Yes

Acetaminophen

Hidden Talent

Acetaminophen

Analgesia

Antipyresis

NO anti-inflammation

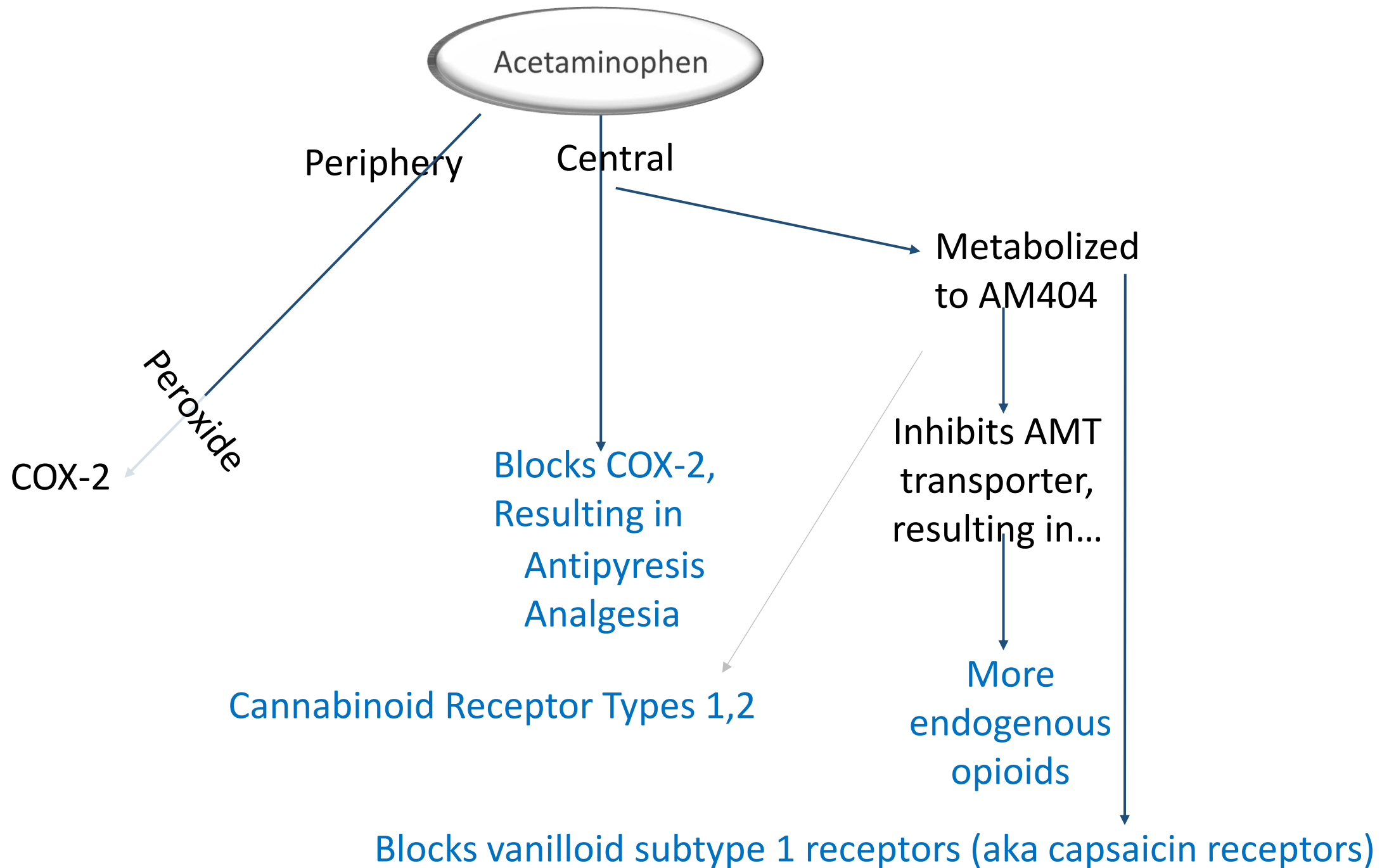
Acetaminophen

Freely passes blood-brain barrier

Action may be inhibited by peroxide (abundant in peripheral inflammation, minimal centrally)

Action is central

Selective for COX-2



Acetaminophen Disadvantages

Less effective against post-op pain than **NSAIDs**

- Weaker **analgesia** than most (**similar to aspirin**)
- **No anti-inflammatory** effect, which is a part of most dental pains

Acetaminophen Disadvantages

Hepatotoxicity

- Toxic metabolite **cannot be adequately conjugated** if in excess of maximum
- **Lower dosage** for
 - Poorly **nourished**
 - **Liver** dysfunction
 - Hepatotoxic **medications**
 - Augmentin, statins, prescribed testosterone, etc
 - Eg, 2g/day maximum for chronic alcoholic

Acetaminophen Dosing

	Regular Strength 325 mg	Extra Strength 500 mg	Extended Release 650 mg
Self-Rx Schedule	650 mg q4-6h	q6h	1300 mg q8h
Self-Rx Maximum (mg/d)	3250	3000	3900
Under provider's supervision (mg/d)	4000*	4000*	4000*

*FDA & manufacturer recommend 3000 mg/d max

Lexicomp

Acetaminophen + NSAID

May be more effective than either alone

- May be additive
- Different sites, different mechanism

CONTAINS 2 MEDICINES

Acetaminophen + Ibuprofen

Advil
DUAL ACTION
WITH Acetaminophen

Acetaminophen 250 mg and
Ibuprofen (NSAID) 125 mg Tablets
Pain Reliever



Caplets*

*Capsule-Shaped Tablets

$$\frac{250}{3,000} = 8.3\% \text{ of max}$$

$$\frac{150}{3,200} = 3.9\% \text{ of max}$$

CONTAINS 2 MEDICINES

Acetaminophen + Ibuprofen

Advil
DUAL ACTION
WITH **Acetaminophen**

Acetaminophen 250 mg and
Ibuprofen (NSAID) 125 mg Tablets
Pain Reliever



Caplets*

*Capsule-Shaped Tablets

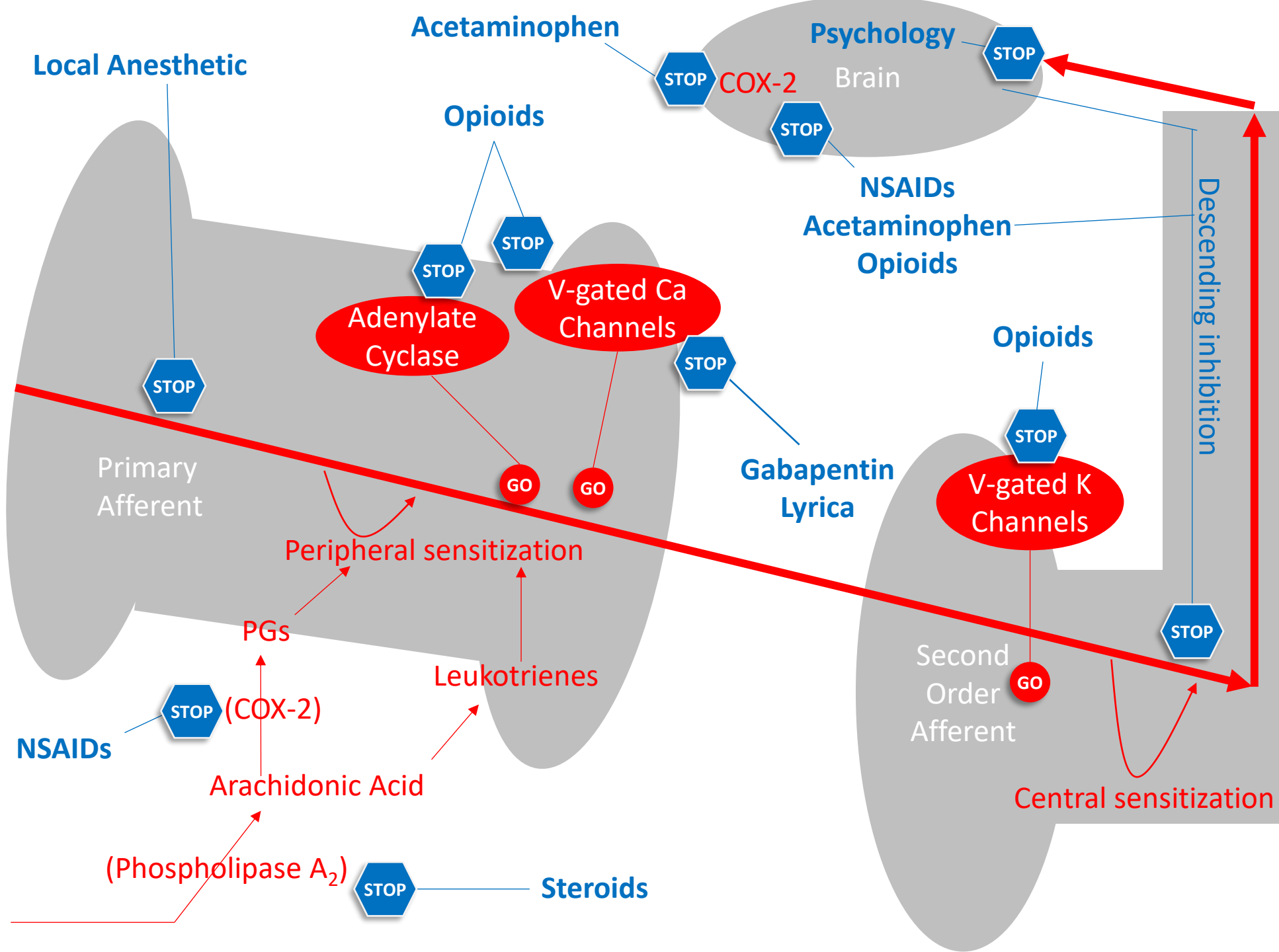
Directions: take 2 caplets q8h

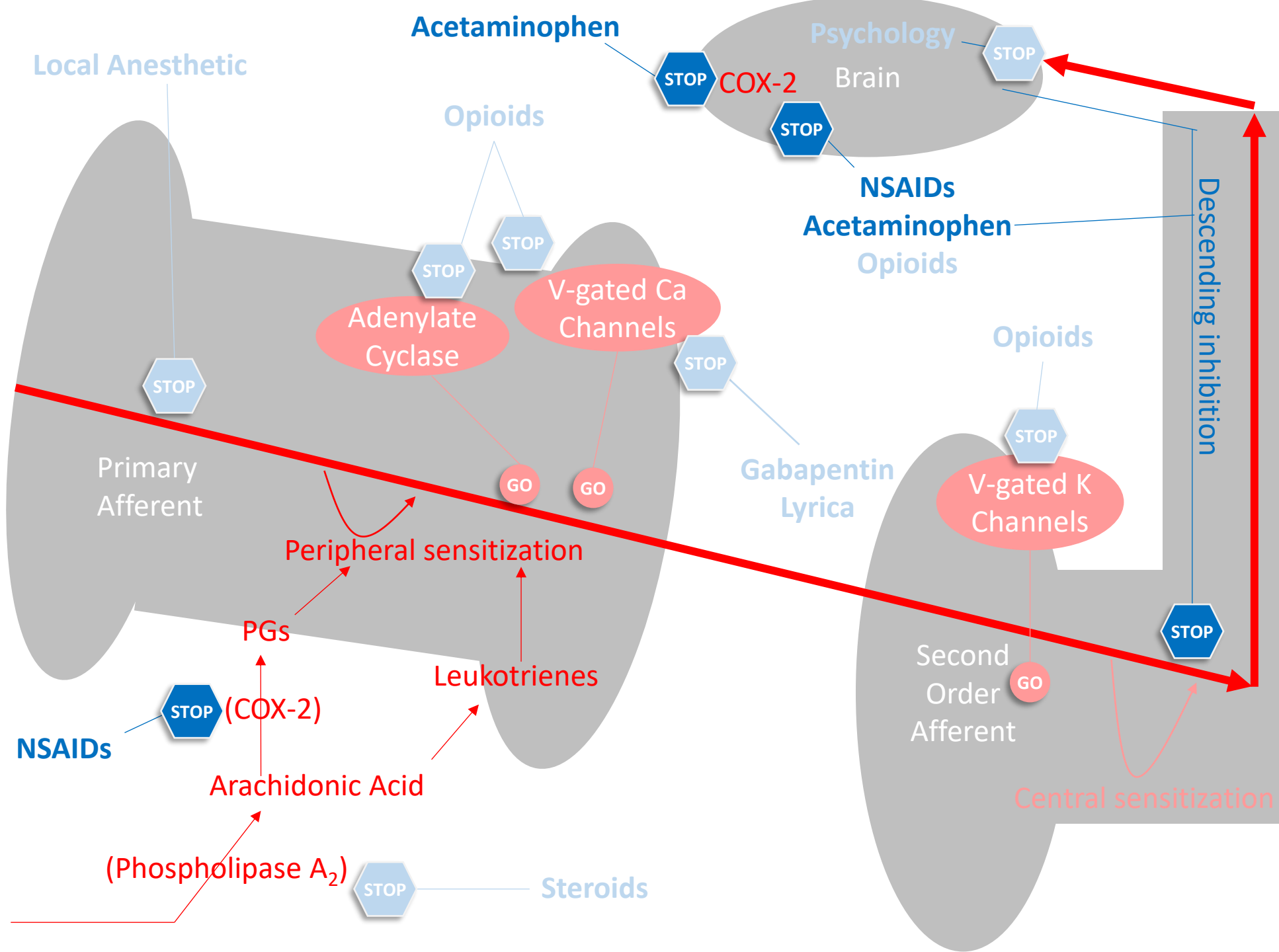
Acetaminophen

250 mg x 2 caplets x 3 times = **1,500 mg**

Ibuprofen

150 mg x 2 caplets x 3 times = **900 mg**





	Post-op Anesthesia	NSAIDs	Steroids	Acetaminophen	Opioids
Anti-inflammatory	None	Good	Excellent	None	None
Peripheral Analgesia	Complete	Yes	None	None	Yes
Central Analgesia	N/A	Yes	None	Yes	Yes
Analgesic Ceiling	None	Yes	N/A	Yes	No
Anti-inflam Ceiling	N/A	Yes	No	N/A	N/A
Tolerance	NS	NS	Possible	NS	Pronounced
Dependence	None	None	Possible	None	Yes
Addictive	None	None	Possible	None	Yes
Controlled	None	None	None	None	Yes

Acts on receptors:
 Vanilloid (capsaicin)
 Cananbinoid
 Opioid

AAOMS White Paper 2020

Opioid Prescribing: Acute and Postoperative Pain Management

- “NSAIDs and APAP, taken simultaneously, work synergistically to rival opioids in their analgesic effect, but dosage levels and times of administration should be carefully documented to prevent overdose”

If patients request narcotics, explain why narcotics are **not superior** (and by risks, are **inferior**) to the previously mentioned treatments

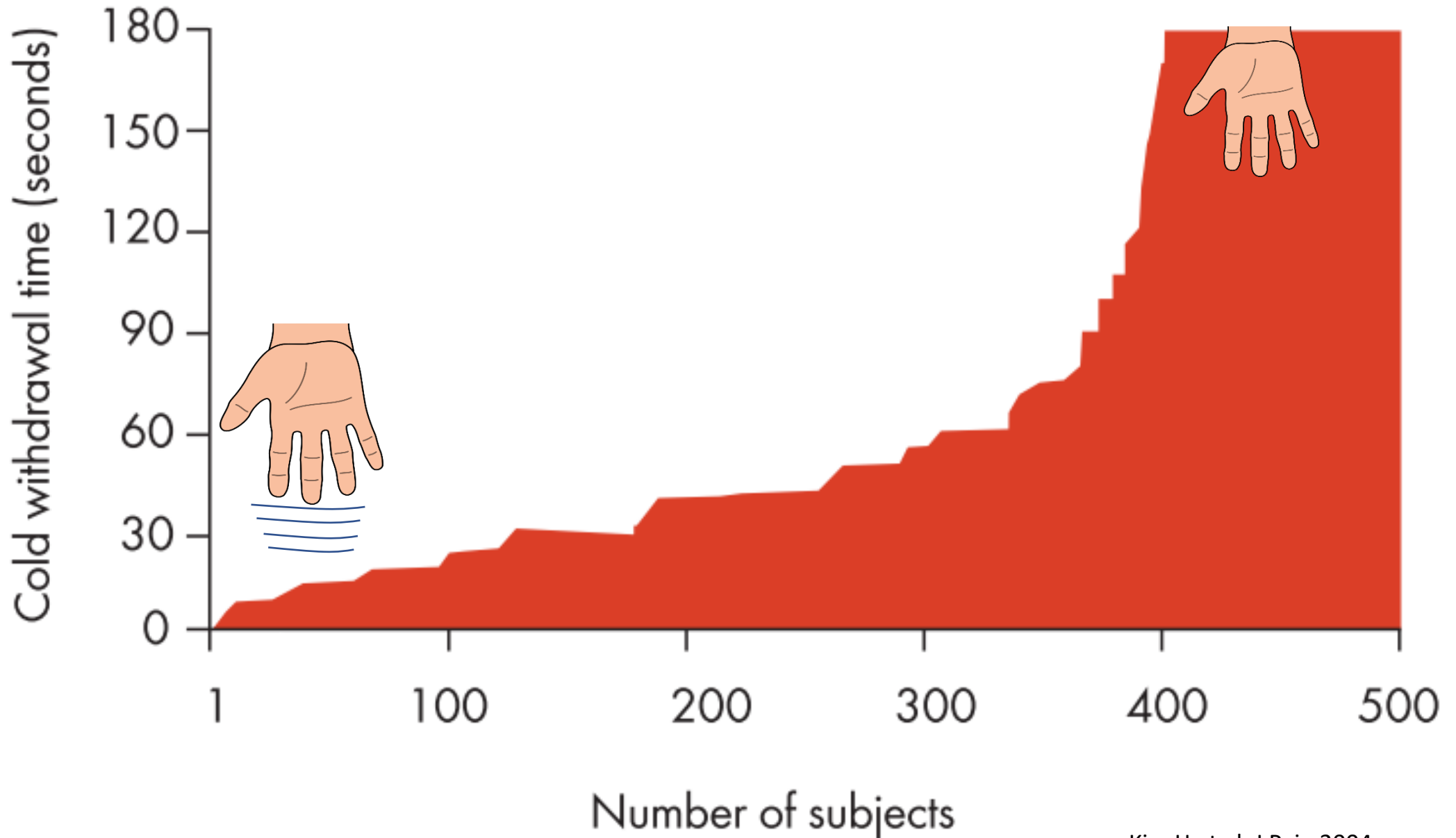
(PAIN)

INDIVIDUALIZE

3. Individualize

PAIN Prevention Paradigm

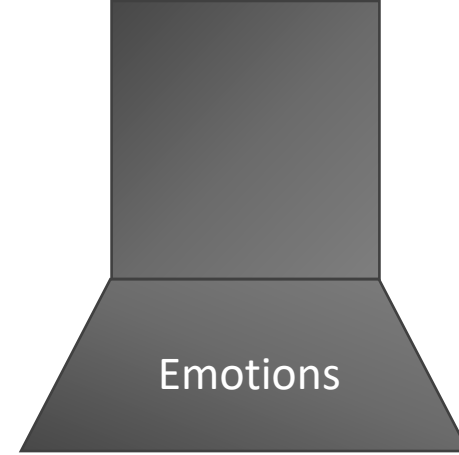
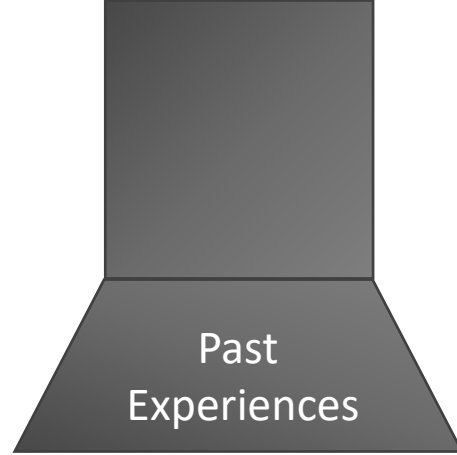
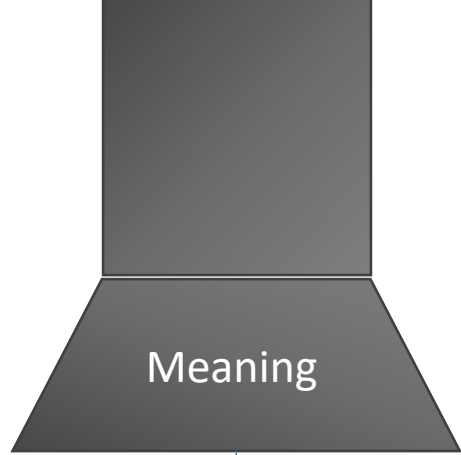
“That shouldn’t hurt.”



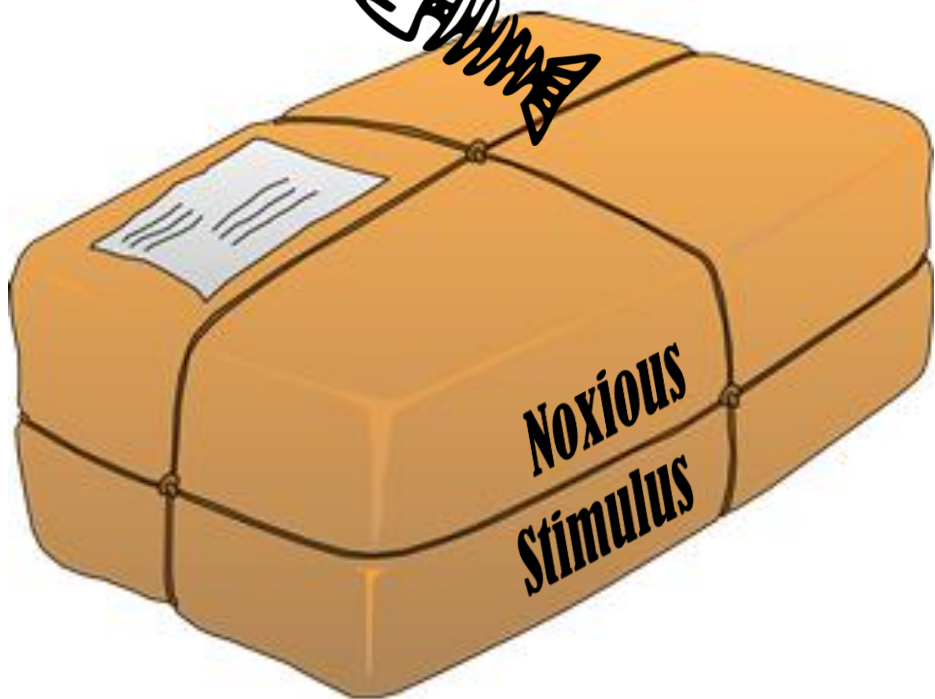
Reasons for Different Pain Responses

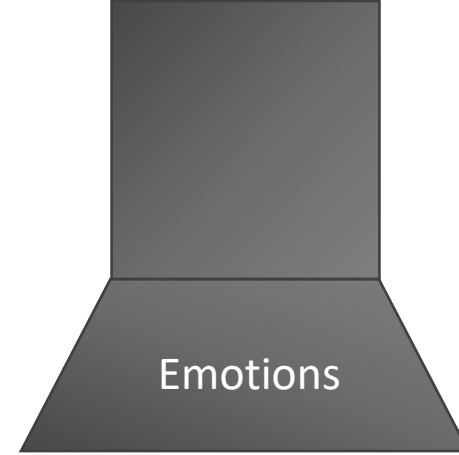
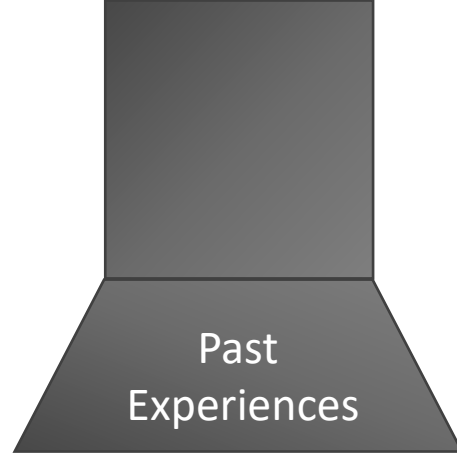
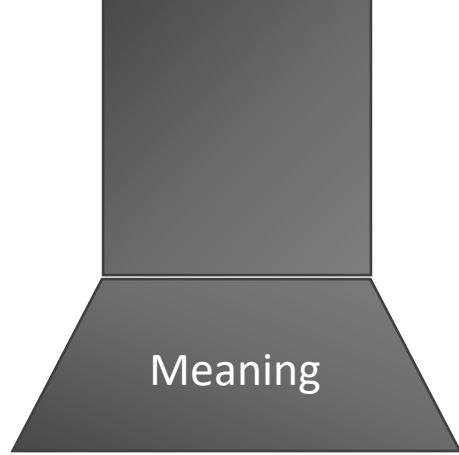
Balance of
Suppressors and
Amplifiers

Context/Perception

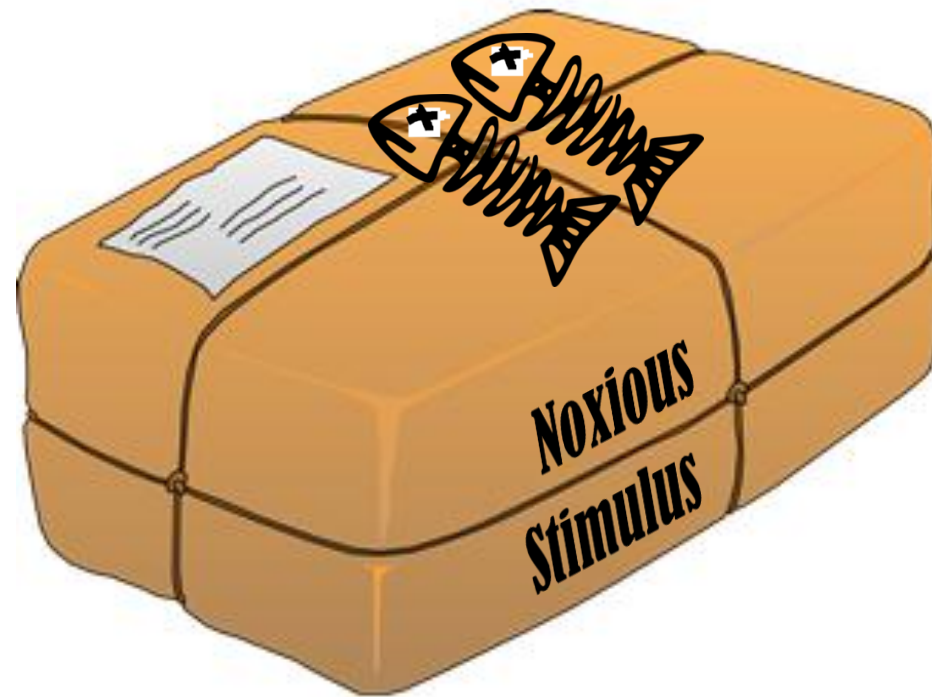


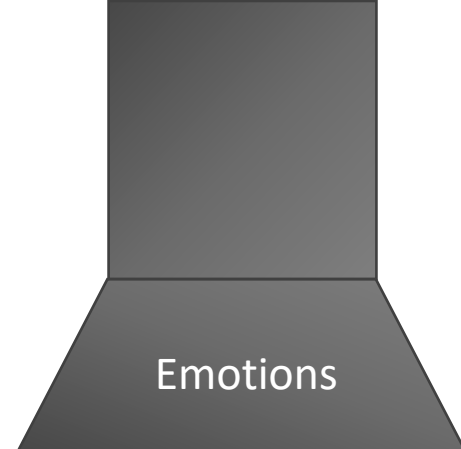
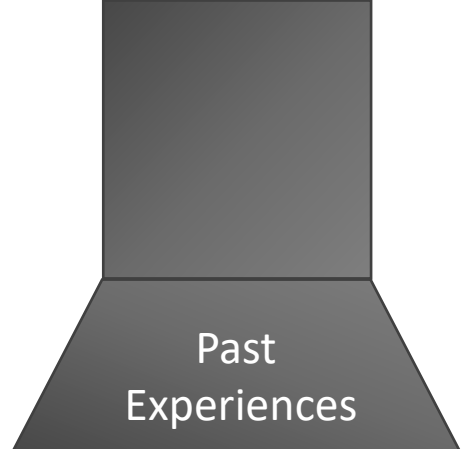
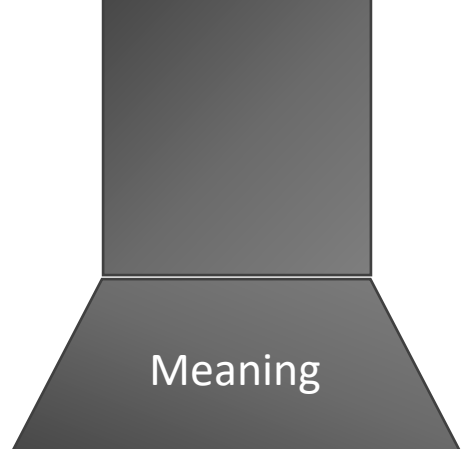
I'm falling apart



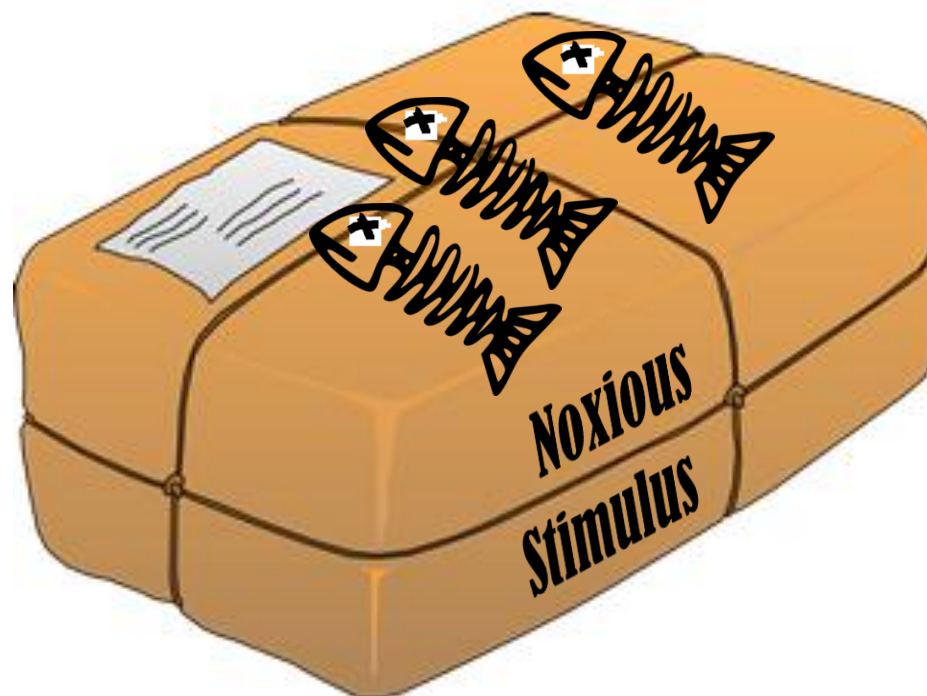


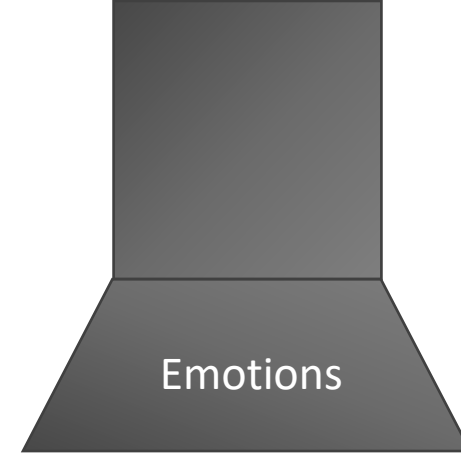
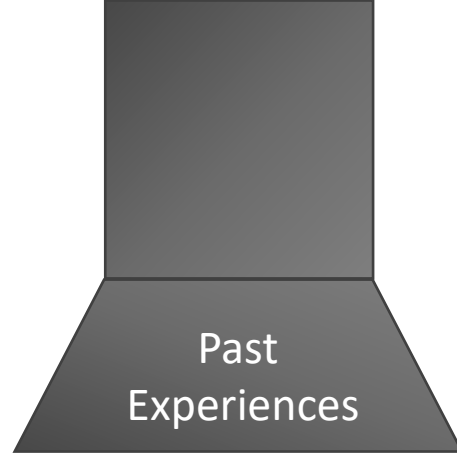
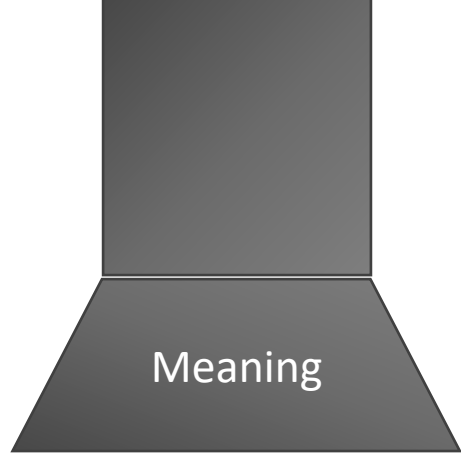
Heartless
childhood
dentist





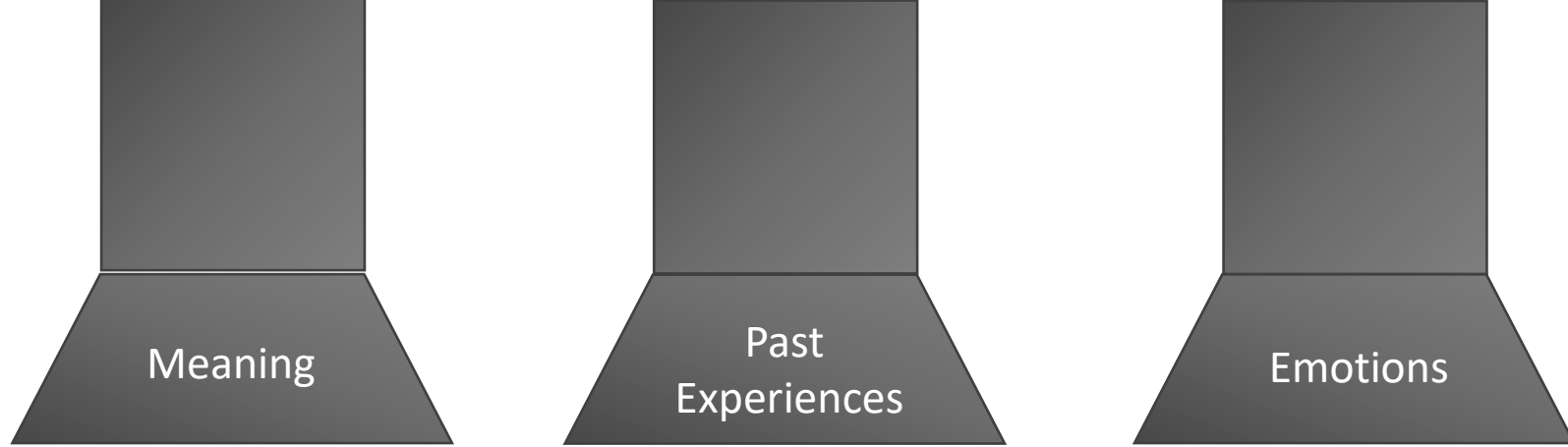
Anxiety





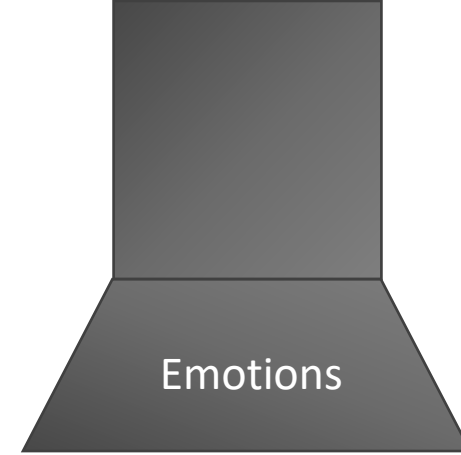
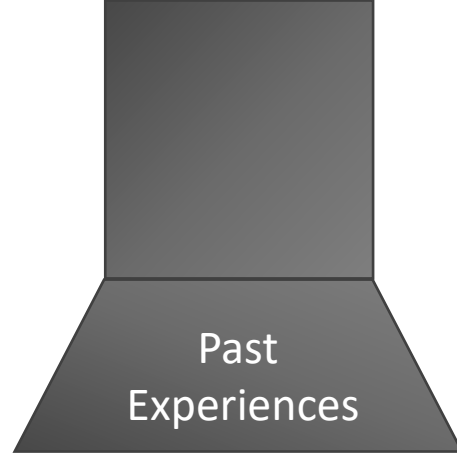
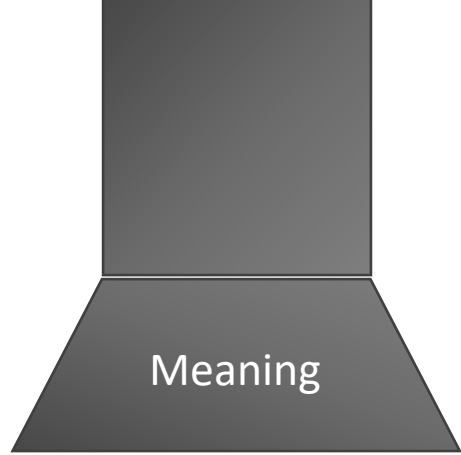
Bettering my health





Fun childhood dentist





Trust

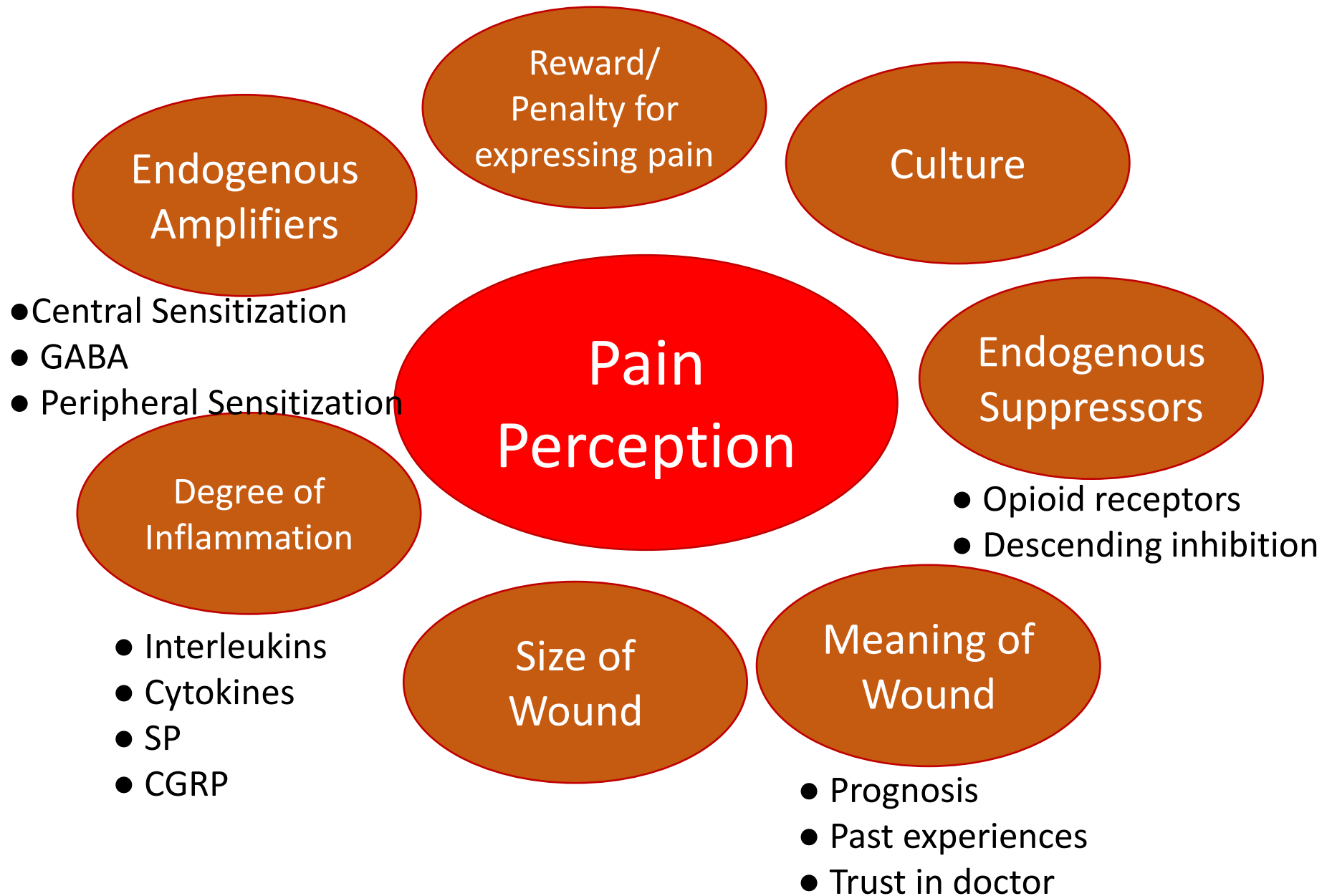


Pain Definition

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

International Association for the
Study of Pain

Biopsychosocial Model of Pain



Risk Factors for Chronic Post- Surgical Pain

- Pre-Surgical
 - Depression
 - Anxiety
 - Surgical fear
 - Pain
- Post-Surgical
 - Pain catastrophizing
 - Rumination, magnification, helplessness

Psychology

Subtle and Overt

Diagnostic Criteria for Temporomandibular Disorders (DC/TMD) for Clinical and Research Applications: Recommendations of the International RDC/TMD Consortium Network* and Orofacial Pain Special Interest Group†

Application	Axis I: Physical diagnosis		Axis II: Psychosocial status	
	Pain diagnoses	Joint diagnoses	Distress and pain disability	
	Clinical or research		Clinical	Clinical or research
Screening test	TMD pain screener	DC/TMD for disc displacements, degenerative joint disease, and subluxation	PHQ-4 and GCPS	PHQ-9, GAD-7, PHQ-15, and GCPS
Confirmatory test	DC/TMD for myalgia, arthralgia, and headache attributed to TMD	Imaging: MRI for disc displacements, CT for degenerative joint disease, and panoramic radiographs, MRI, or CT for subluxation	Consultation with mental health provider	Structured psychiatric or behavioral medicine interview

Patient Health Questionnaire-4 (PHQ-4), Graded Chronic Pain Scale (GCPS), Patient Health Questionnaire-9 (PHQ-9), Generalized Anxiety Disorder-7 (GAD-7), Patient Health Questionnaire-15 (PHQ-15).

Dental Anxiety in General Population

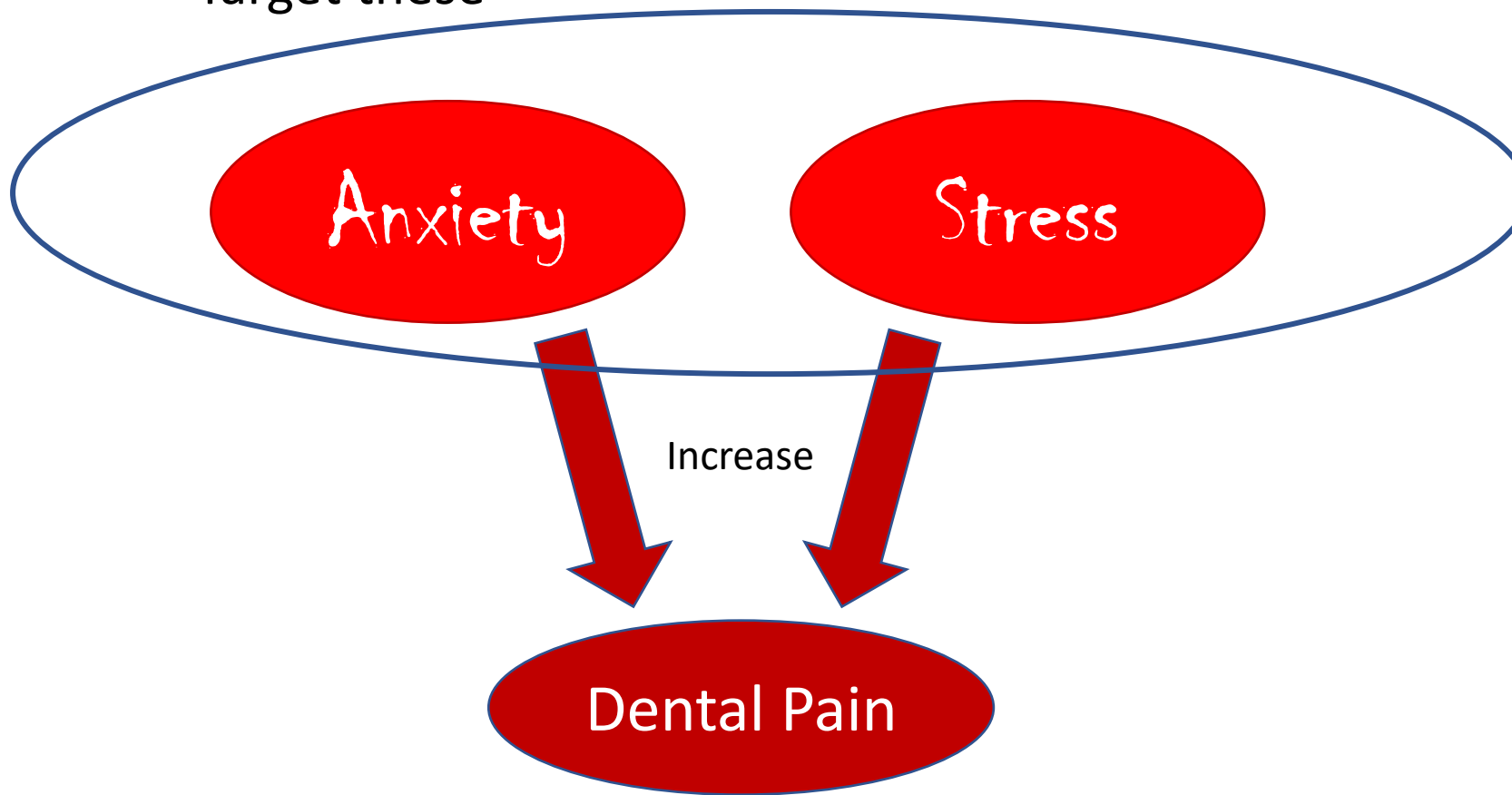
4-20%

Independent of background

- Ethnic
- Social
- Cultural

Not reduced by improving dental treatment

Target these



Shown to be effective in reducing dental pain in some patients



No drug interactions

No adverse effects

No overdose concerns

No addiction (or if so, who cares?)

There is no such thing as the

- AEA (Aroma Enforcement Agency)
- SSEA (Soothing Sounds Enforcement Agency)



But Variations Exist

- In **general**, **relaxation** and **distraction** reduced anxiety significantly
- But for **highly anxious**
 - **Relaxation** was particularly **effective**
 - **Distraction** was **not** effective
 - Like trying to hide the needle
- Lahmann C et al, JAMA 2008

Explaining Beforehand

- **Sensations** that will be felt (*that's not a surprise*)
- **Sequence** of procedure (*I know what's next*)
- Strongest and most consistent results in reducing
 - Negative experience
 - Pain
 - Distress
- Suls J & Wan CK, J Consult Clin Psychol 1989

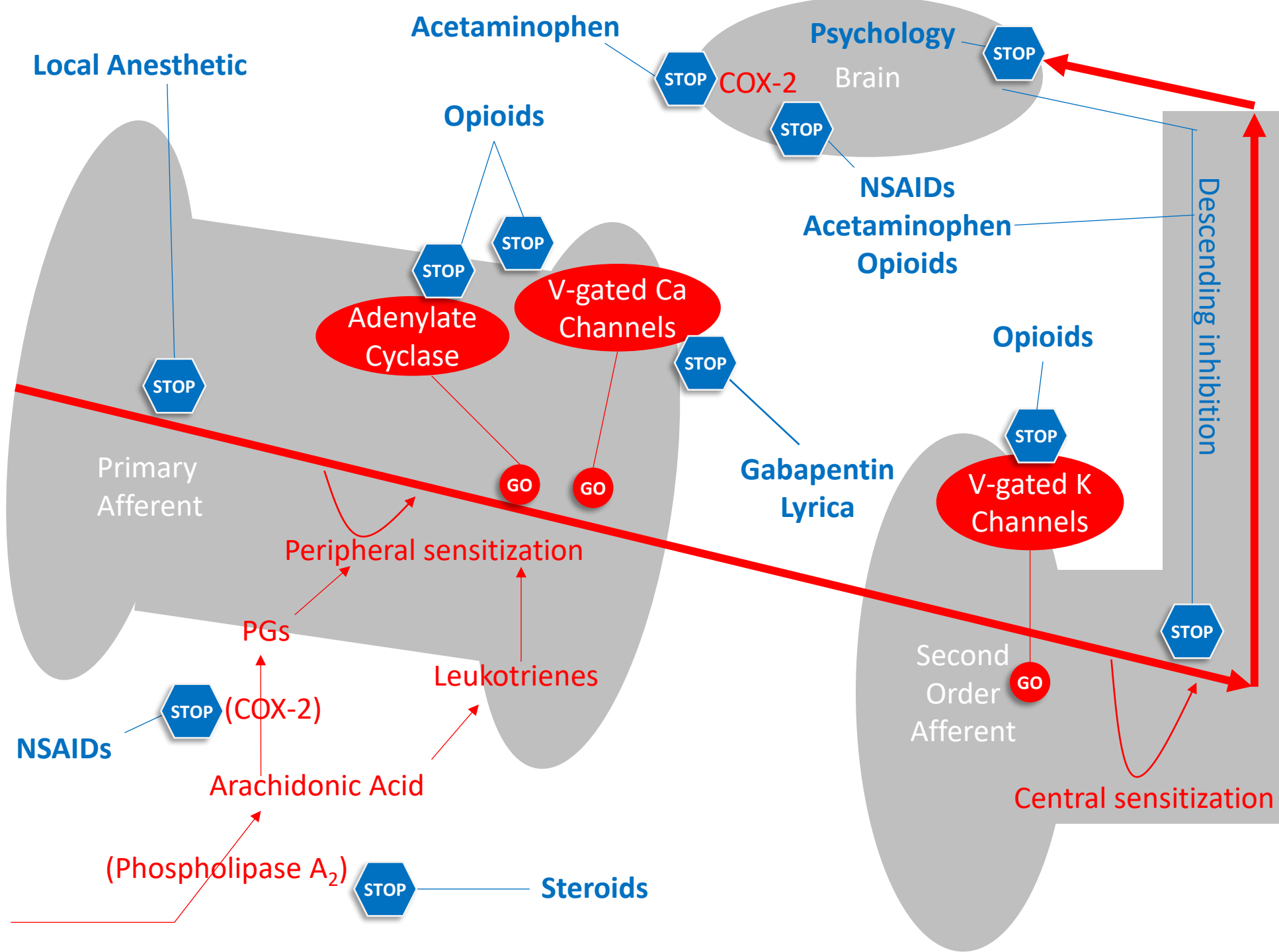
Distraction Postsurgical

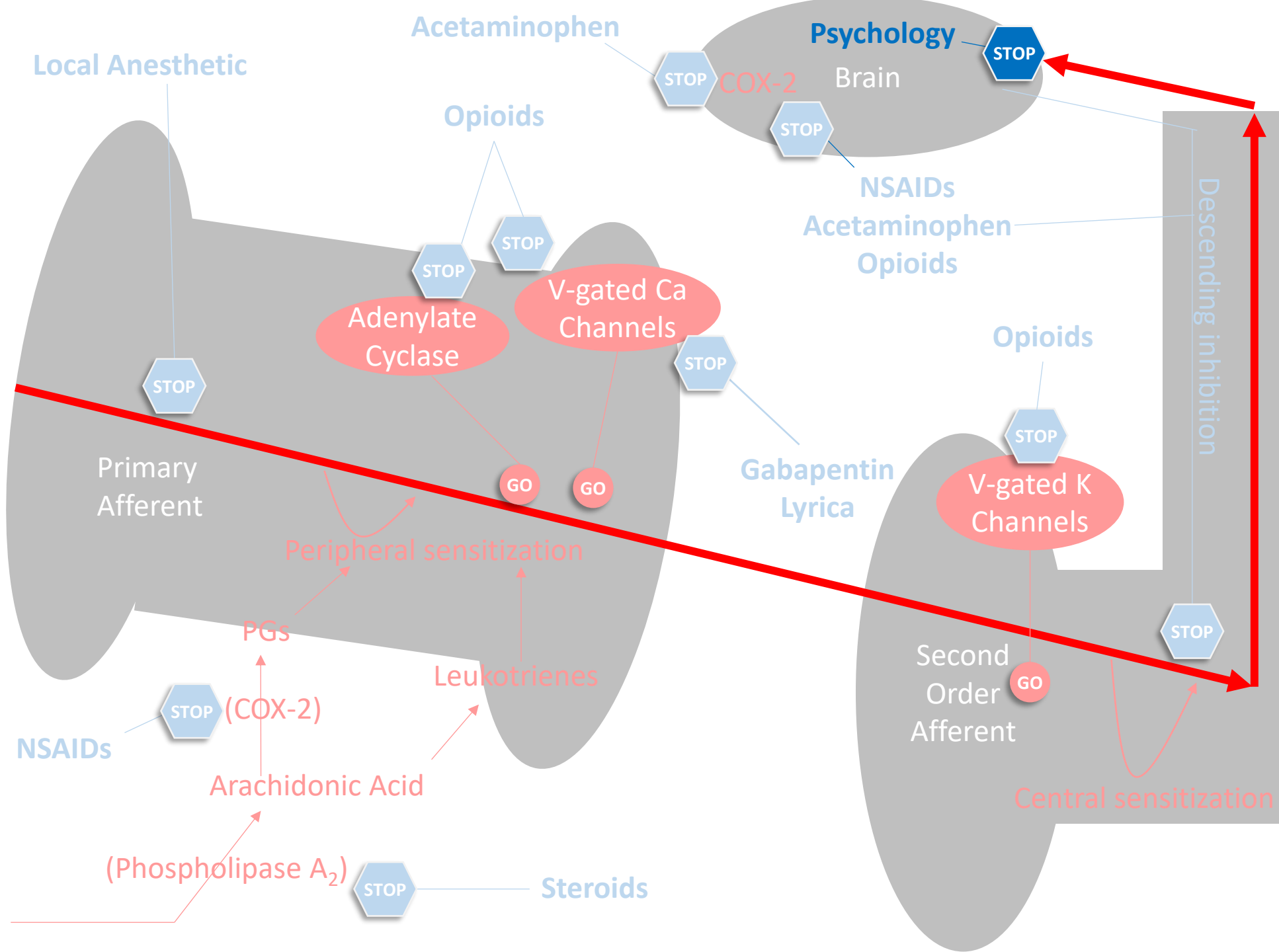


- Surgical **extraction** of upper and lower third molars
- Asked to **express** pain ratings, **either**
 - Every 20 minutes
 - Every 60 minutes
- **More frequent** reporting group had **higher pain scores**

So should we not call our patient to check on them?

- No, call them
- Then they know someone is watching out for them (so they don't have to)
- But call them every 60 minutes (rather than every 20 minutes)







But Sometimes You Will Prescribe Opioids

And this is how to use them

(PAIN)


NARCOTICS

4. Narcotics

PAIN Prevention Paradigm

Morphine Mg Equivalent (MME) can help you determine how much opioid your patient is taking

Weaker



	Oral MME Conversion Factor
Meperidine	0.1
Tramadol	0.1
Codeine	0.15
Hydrocodone	1
Morphine, oral	1
Oxycodone	1.5
Methadone	3
Morphine, IV	3
Hydromorphone	4

Stronger

The amount of mg of morphine to which an opioid dose is equal

1 mg Tramadol = 0.1 mg Morphine

1 mg Hydromorphone = 4 mg Morphine
(You need 4 mg Morphine to have the same effect as 1 mg Hydromorphone)

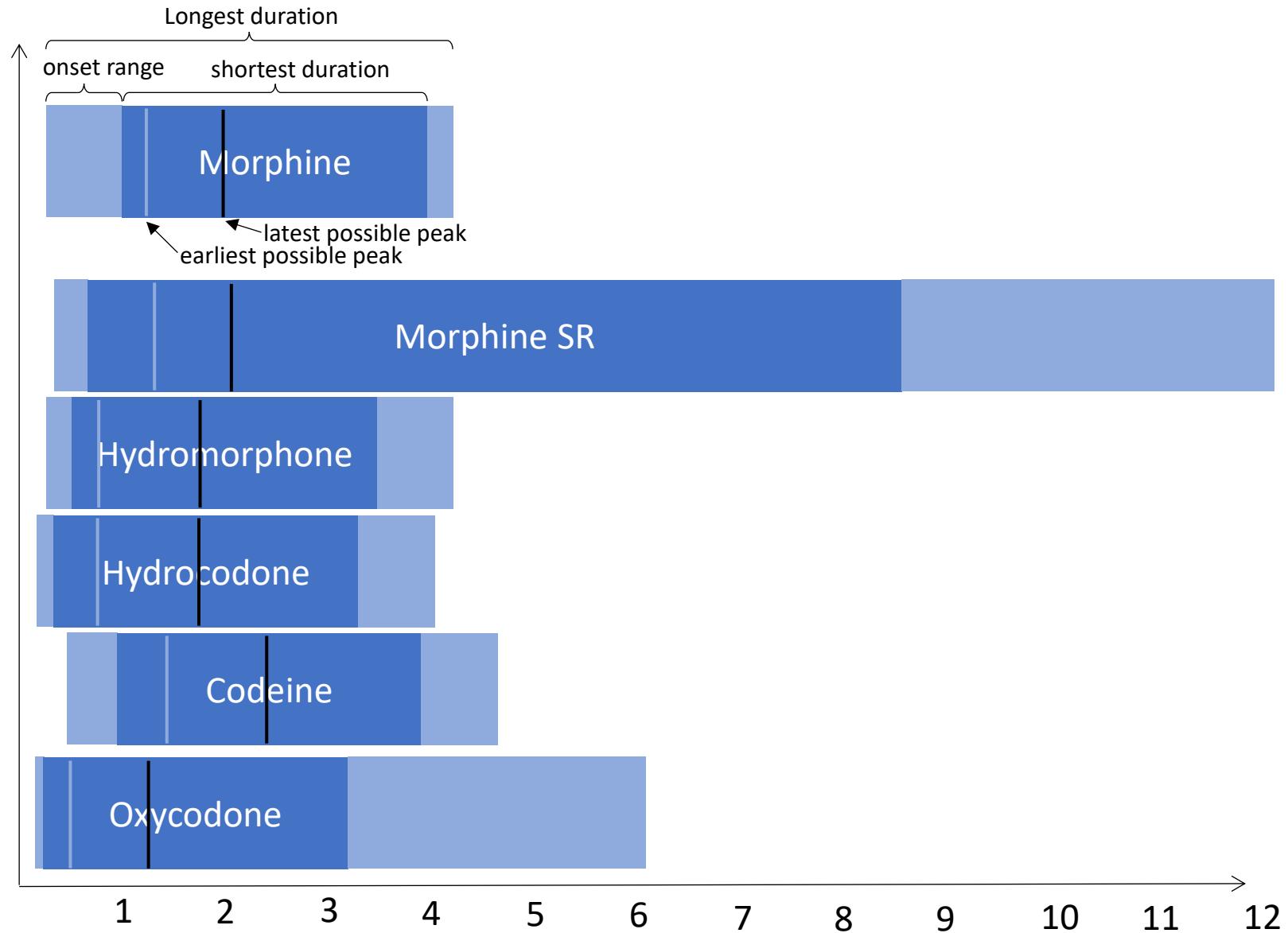
MME	Brand	Dosage	Units	Components	Form	MME	Brand	Dose	Units	Components	Form	MME	Brand	Dose	Units	Components	Form
1.125	#1	7.5/300	mg/mg	codeine/APAP	tablet	20	Kadian	20	mg	morphine	ER capsule	64	Exalgo	16	mg	hydromorphone	tablet
2.25	#2	15/300	mg/mg	codeine/APAP	tablet	20	Conzip	200	mg	tramadol	capsule	75	Avinza	75	mg	morphine	CR capsule
	Percocet or					20	Ultram	200	mg	tramadol	ER tablet	78	Fentora	600	mcg	fentanyl	buccal tablet
3.75	Endocet	2.5/325	mg/mg	oxycodone/APAP	tablet	20	Ryzolt	200	mg	tramadol	tablet						transmucosal
3.75	Ultracet	37.5/325	mg/mg	tramadol/APAP	tablet	20.25	Xtampza	13.5	mg	oxycodone	ER tablet	78	Actiq	600	mcg	fentanyl	lollipop
4.4	Seglentis	44/56	mg/mg	tramadol/celecoxib	tablet	22.5	Oxycontin	15	mg	oxycodone	CR tablet	80	Kadian	80	mg	morphine	ER capsule
4.5	#3	30/300	mg/mg	codeine/APAP	tablet	26	Fentora	200	mcg	fentanyl	buccal tablet	80	Hysingla	80	mg	hydrocodone	ER tablet
4.5	Fiorcet	50/300/40		Butalbital/APAP/caf							transmucosal	90	Oxycontin	60	mg	oxycodone	CR tablet
		/30	mg	feine/codeine	capsule	26	Actiq	200	mcg	fentanyl	lollipop	90		37.5	mg	fentanyl	patch
4.5	Fiorinal	50/300/40		Butalbital/ASA/caff		27	Xtampza	18	mg	oxycodone	ER tablet	90	Avinza	90	mg	morphine	capsule
		/30	mg	eine/codeine	capsule	28.8		12	mcg	fentanyl	patch	96	Subsys	600	mcg	fentanyl	SL spray
5	Ultram	50	mg	tramadol	ER tablet	30	MS Contin	30	mg	morphine	ER tablet	100	MS Contin	100	mg	morphine	ER tablet
5	Lortab	5	mg	hydrocodone	tablet	30	Oxycontin	20	mg	oxycodone	CR tablet	100	Kadian	100	mg	morphine	ER capsule
5	Norco	5	mg	hydrocodone	tablet	30	MSIR	30	mg	morphine	IR tablet	100	Hysingla	100	mg	hydrocodone	ER tablet
7.5	Lortab	7.5	mg	hydrocodone	tablet	30	Avinza	30	mg	morphine	capsule	104	Fentora	800	mcg	fentanyl	buccal tablet
7.5	Vicoprofen	7.5	mg	hydrocodone	tablet	30	Conzip	300	mg	tramadol	capsule						transmucosal
	Percocet or					30	Ultram	300	mg	tramadol	ER tablet	104	Actiq	800	mcg	fentanyl	lollipop
7.5	Endocet	5/325	mg/mg	oxycodone/APAP	tablet	30	Hysingla	30	mg	hydrocodone	ER tablet	120	Avinza	120	mg	morphine	capsule
8	Dilaudid	2	mg	hydromorphone	tablet	30		10	mg	methadone	tablet	120	Oxycontin	80	mg	oxycodone	CR tablet
9	#4	60/300	mg/mg	codeine/APAP	tablet		Dilaudid or					120	Hysingla	120	mg	hydrocodone	ER tablet
10	Kadian	10	mg	morphine	ER capsule	32	Exalgo	8	mg	hydromorphone	tablet	120		40	mg	methadone	tablet
10	Ultram	100	mg	tramadol	ER tablet	40	Kadian	40	mg	morphine	ER capsule	120		50	mcg	fentanyl	patch
10	Lortab	10	mg	hydrocodone	tablet	40	Hysingla	40	mg	hydrocodone	ER tablet	128	Subsys	800	mcg	fentanyl	SL spray
10	Norco	10	mg	hydrocodone	tablet	40.5	Xtampza	27	mg	oxycodone	ER tablet	128	Exalgo	32	mg	hydromorphone	tablet
10	Conzip	100	mg	tramadol	capsule	45	Avinza	45	mg	morphine	CR capsule	150		62.5	mcg	fentanyl	patch
10	Ryzolt	100	mg	tramadol	tablet	45	Oxycontin	30	mg	oxycodone	CR tablet						transmucosal
	Percocet or					48	Exalgo	12	mg	hydromorphone	tablet	156	Actiq	1200	mcg	fentanyl	lollipop
11.25	Endocet	7.5	mg/mg	oxycodone/APAP	tablet	52	Fentora	400	mcg	fentanyl	buccal tablet	180		75	mcg	fentanyl	patch
13	Fentora	100	mcg	fentanyl	buccal tablet						transmucosal	192	Subsys	1200	mcg	fentanyl	SL spray
13.5	Xtampza	9	mg	oxycodone	ER tablet	52	Actiq	400	mcg	fentanyl	lollipop	200	MS Contin	200	mg	morphine	ER tablet
15	MSIR	15	mg	morphine	IR tablet	54	Xtampza	36	mg	oxycodone	ER tablet						transmucosal
15	MS Contin	15	mg	morphine	ER tablet	60	MS Contin	60	mg	morphine	ER tablet	208	Actiq	1600	mcg	fentanyl	lollipop
15	Oxycontin	10	mg	oxycodone	CR tablet	60	Avinza	60	mg	morphine	capsule	210		87.5	mcg	fentanyl	patch
	Percocet or					60	Kadian	60	mg	morphine	ER capsule	240	Duragesic	100	mcg	fentanyl	patch
15	Endocet	10	mg/mg	oxycodone/APAP	tablet	60	Hysingla	60	mg	hydrocodone	ER tablet	256	Subsys	1600	mcg	fentanyl	SL spray
15	Dolophine	5	mg	methadone	tablet	60	Oxycontin	40	mg	oxycodone	CR tablet						
16	Dilaudid	4	mg	hydromorphone	tablet	60	Duragesic	25	mg	fentanyl	patch						
20	Hysingla	20	mg	hydrocodone	ER tablet	64	Subsys	400	mcg	fentanyl	SL spray						

Other forms (of pain narcotics)

Brand	Dosage	Units	Components	Form
Demerol	50/30-100/1	mg/mL	meperidine	injection
	50/5	mg/mL	meperidine	syrup
Qdolo	5/1	mg/mL	tramadol	oral solution
	120/12/5	mg/mg/mL	APAP/codeine	oral solution
Hycet	7.5/325/15	mg/mg/mL	APAP/codeine	oral solution
Duramorph	0.5 or 1/10	mg/mL	morphine	injection
Infumorph	10 or 25/20	mg/mL	morphine	Injection
Methadose	10/1	mg/mL	methadone	oral solution

Meperidine, due to its inadequacy, drug interactions, and adverse effects, is largely restricted, as better alternatives are available

Duration of Action

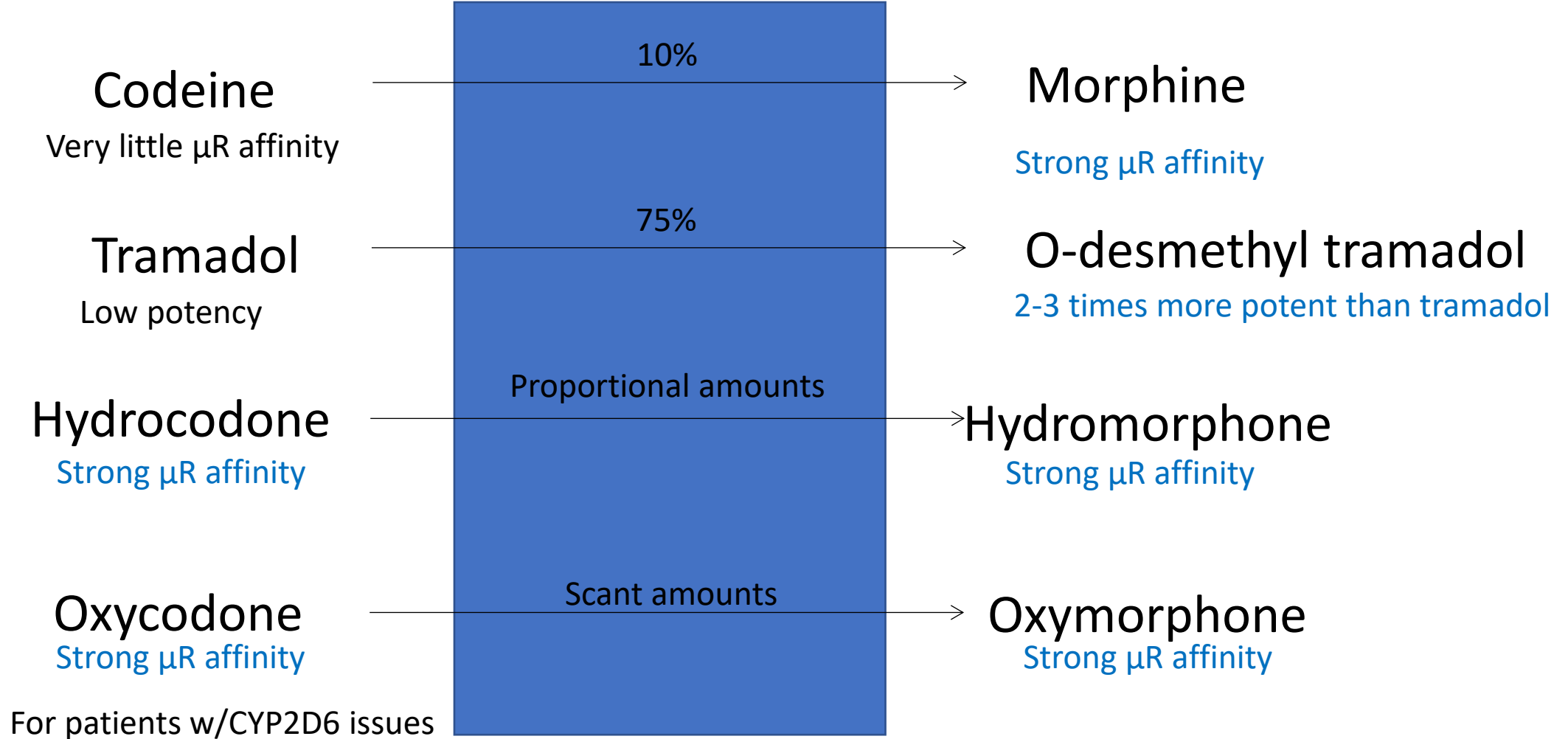


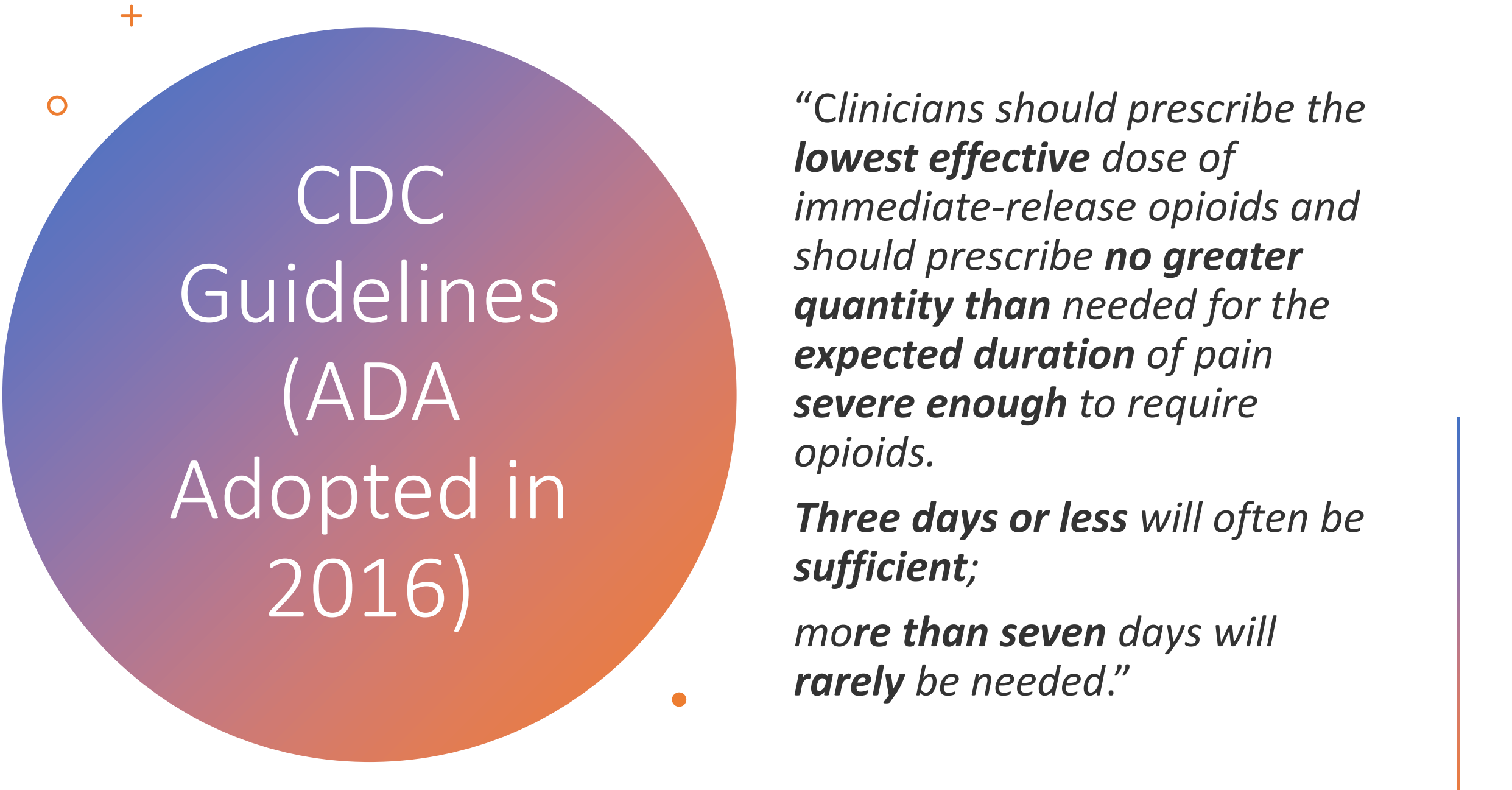
Generic	Brand	Duration (hr)	Onset (min)	Peak (min)	Comments	Typical Initial Dosing
Morphine IR	MSIR (morphine sulfate IR)	3-4	15-60	60	10,15,30 mg tabs	15 - 30 mg q 4h prn
Morphine SR	MS Contin	8-12	20-40	60	Q12h: 15,30,60,100,200 mg tabs	15 mg q 8 - 12 h
Hydromorphone	Dilaudid	3-4	15-30	30-90	1,2,3,4,8 mg tabs	2 - 4 mg q 4 - 6 h prn (tablets)
Fentanyl patch	Duragesic	72	8-12	24-36	25 mcg patch = 60 mg oral morphine/day. Patches 12,25,50,75,100 mcg/hr	
Hydrocodone	Zohydro ER, Hysingla ER					
Hydrocodone / APAP	Lortab (syrup), formerly Norco and Vicodin (pill)	3-4	10-20	30-60	5,7.5,10 mg (500,325 mg)	2.5 - 10 mg q 4 - 6 h
Codeine		4-6	30-60	60-90		15 - 60 mg q 4h prn; max total daily dose: 360 mg/d
Oxycodone		3-6	10-15	30-60		5 to 15 mg every 4 to 6 hours as needed

- Poorly functional in 5-10% Caucasians
- Inhibited by SSRI's, especially Prozac and Paxil

- Elevated in 1-7% Caucasians
- Enhanced by dexamethasone

Demethylation via
Cytochrome P450 CYP2D6





CDC
Guidelines
(ADA
Adopted in
2016)

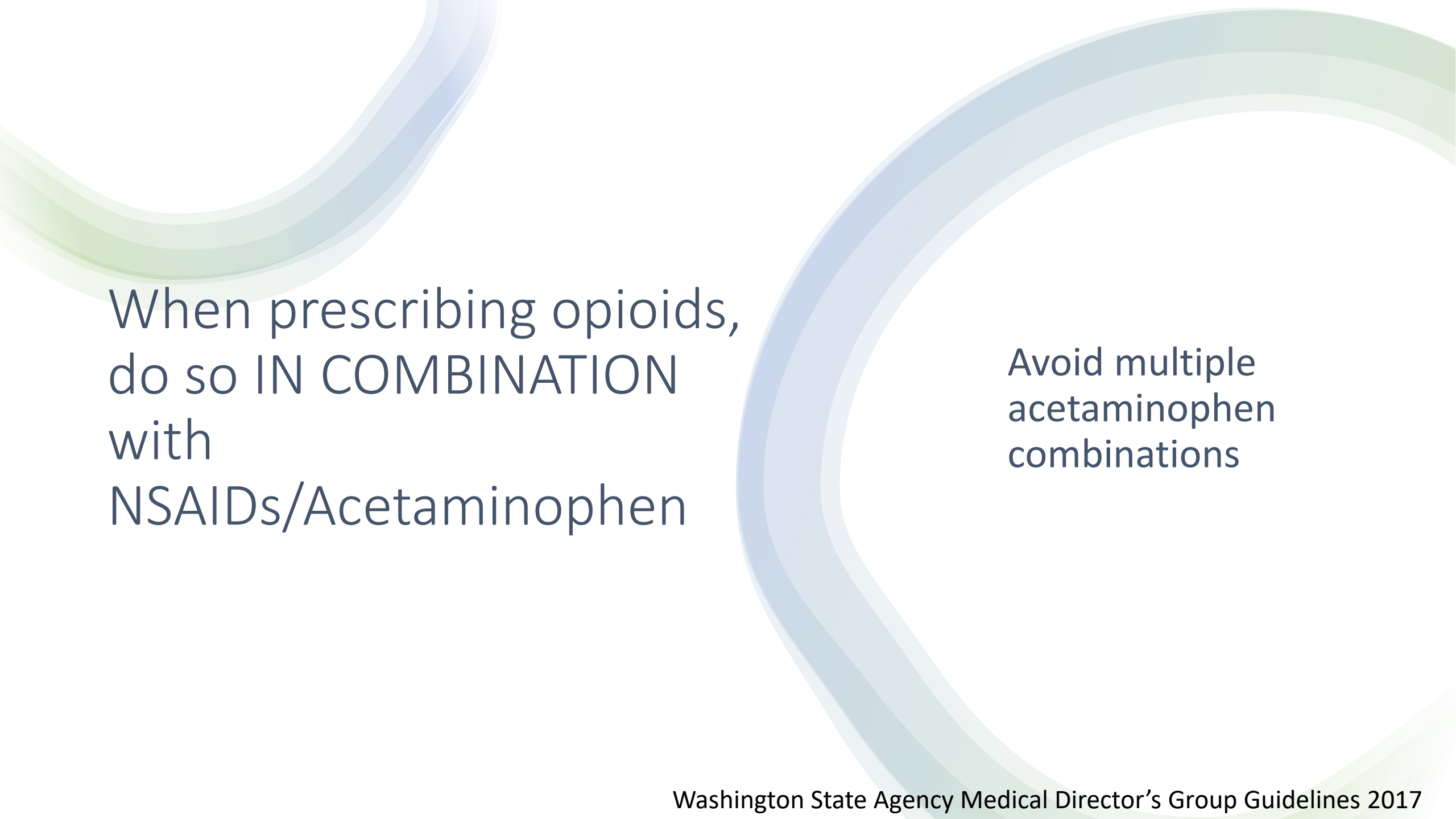
*“Clinicians should prescribe the **lowest effective** dose of immediate-release opioids and should prescribe **no greater quantity than needed** for the **expected duration** of pain **severe enough** to require opioids.*

***Three days or less** will often be **sufficient**;*

***more than seven days** will **rarely** be needed.”*

Study on Adolescents After Third Molar Extractions

- Most adolescents take opioid for only **1-3 days** after the procedure
- **Leftovers** can be misused/diverted
 - Used by **family/friends**
 - Misused **later by patient**
 - **Sold**



When prescribing opioids,
do so IN COMBINATION
with
NSAIDs/Acetaminophen

Avoid multiple
acetaminophen
combinations

Step 1

Ibuprofen 400-800 mg TID-QID or equivalent
OR
APAP 500-1000 mg TID

Generally adequate for up to moderate pain. Must take RTC.

When inadequate, or pain anticipated to be severe, **add** step 2

+

Step 2

Oxycodone 5-10 mg 1-2 tabs q4h prn
Morphine 15 mg 1-2 tabs q4h prn
Tramadol 50 mg 1 tab q4h prn
Pentazocine 50 mg 1 tab q4h prn

HC/APAP 5-10/350 1-2 tabs q4h prn
OC/APAP 5-10/350 1-2 tabs q4h prn
Pentazocine/APAP 1-2 tabs q4h prn
Tramadol/APAP 5-10/350 1-2 tabs q4h prn

Only if no APAP in step 1

Combinations

Component dosing may not make sense

May be better to take individually at different doses

Avoid opioids when

Patient or parent specifically
requests NO opioids

In **recovery** from **SUD** but at
high risk for relapse

When In
Active
Treatment For
Substance
Abuse
Disorder

- Consult with the treating **addiction specialist**
- **Involve** a family member, 12-step program sponsor, or addiction counselor in medication **administration**
- **Advise increasing attendance** at meetings and/or counseling sessions during the post-operative period

Adverse Reactions

For Hydrocodone

Allergy

Nearly all opioids (including codeine) can trigger degranulation of mast cells, leading to histamine release

If reported, switch to molecularly dissimilar analgesics

Opioid Classification

Strong Agonists

- Phenanthrenes
 - Morphine
 - Hydromorphone
 - Oxymorphone
- Phenylheptylamines
 - Methadone
- Phenylpiperidines
 - Fentanyl
 - Meperidine

Mild to Moderate Agonists

- Phenanthrenes
 - Codeine
 - Oxycodone
 - Hydrocodone
- Phenylheptylamines
 - Propoxyphene
- Phenylpiperidines
 - Diphenoxylate
 - Loperamide

Opioids with Mixed Receptor Actions

- Phenanthrenes
 - Nalbuphine
 - Buprenorphine
- Morphinans
 - Butorphanol
- Benzomorphans
 - Pentazocine

Adverse Reactions (>10% frequency)

- Gastrointestinal:
 - Constipation (3% to 14%)
 - Nausea (7% to 12%)

Adverse Reactions (1-10% frequency)

- **Cardiovascular:** Hypertension ($\geq 1\%$ to $< 5\%$), peripheral edema (3%)
- **Central nervous system:** Headache (6%), chills ($\geq 1\%$ to $< 5\%$), sedation ($\geq 1\%$ to $< 5\%$), anxiety (4%), insomnia (3%), dizziness (2% to 3%), drowsiness (1% to 3%), fatigue (2%), depression, falling, lethargy, migraine, pain, paresthesia
- **Dermatologic:** Pruritus (1%), hyperhidrosis, night sweats, skin rash
- **Endocrine & metabolic:** Dehydration, hot flash, hypokalemia, increased gamma-glutamyl transferase, increased serum cholesterol
- **Gastrointestinal:** Vomiting (5% to 6%), dyspepsia ($\geq 1\%$ to $< 5\%$), gastroenteritis ($\geq 1\%$ to $< 5\%$), upper abdominal pain ($\geq 1\%$ to $< 5\%$), viral gastroenteritis ($\geq 1\%$ to $< 5\%$), diarrhea (4%), abdominal pain (3%), decreased appetite (2%), xerostomia (1%), abdominal distress, gastroesophageal reflux disease
- **Genitourinary:** Urinary tract infection (5%)
- **Hematologic & oncologic:** Bruise
- **Infection:** Influenza (3%)
- **Neuromuscular & skeletal:** Back pain (4%), muscle spasm (3%), tremor (3%), arthralgia, bone fracture (foot), injury to the joint, joint sprain, limb pain, musculoskeletal chest pain, musculoskeletal pain, myalgia, neck pain, osteoarthritis, strain
- **Otic:** Tinnitus (2%)
- **Respiratory:** Bronchitis ($\geq 1\%$ to $< 5\%$), nasal congestion ($\geq 1\%$ to $< 5\%$), nasopharyngitis ($\geq 1\%$ to $< 5\%$), oropharyngeal pain ($\geq 1\%$ to $< 5\%$), sinusitis ($\geq 1\%$ to $< 5\%$), upper respiratory tract infection (3%), cough, dyspnea
- **Miscellaneous:** Fever, laceration

Adverse Reactions (<10% frequency)

Postmarketing and/or case reports: Abdominal distention, abnormality in thinking, agitation, altered mental status, anaphylaxis, choking sensation, confusion, decreased libido, drug-induced hypersensitivity, drug withdrawal, dysphagia, edema, erythema, esophageal obstruction, flushing, hypogonadism (Brennan 2013; Debono, 2011), hypotension, hypoxia, increased thirst, intestinal obstruction, irritability, malaise, mood changes, muscle twitching, opioid dependence, orthostatic hypotension, palpitations, pancreatitis, presyncope, prolonged QT interval on ECG, respiratory depression, retching, syncope, urinary retention, weakness

Reduce likelihood of
adverse reactions by
reducing dosing



Drug-Drug Interactions

For Hydrocodone





Drug Interactions

- Too numerous to list (check with your pharmacological software / app / book / website)
- Generally, the interactions are:
 - **Enhanced toxic effects**
 - Usually the **CNS depressant** effect
 - **Changes to the serum concentration of the**
 - **Opioid**
 - **Interacting drug**

Drug Interactions

- **Benzodiazepines or other CNS depressants:**
 - Risk for **profound sedation, respiratory depression, coma, and death**
 - Only consider when alternative treatment options are inadequate
 - Limit dosage and durations to the minimum required
 - Follow closely
 - Pair with naloxone
- Lexicomp

Drug Interactions

- **Ethanol** use: May **increase hydrocodone ER plasma levels**
 - Alcohol may **disrupt ER characteristic** of product
 - Potentially fatal overdose of hydrocodone
- Lexicomp



Make sure their list of current medications is actually current!

Hydrocodone and Acetaminophen (Lexi-Drugs)

[Outline](#) [Alphabetical](#)[Expand All](#) Ⓞ[Dosing: Adult](#)[Dosing: Older Adult](#)[Dosing: Altered Kidney Function: Adult](#)[Dosing: Hepatic Impairment: Adult](#)[Dosing: Pediatric](#)[Dosing: Altered Kidney Function:
Pediatric](#)[Dosing: Hepatic Impairment: Pediatric](#)[Uses](#)[Clinical Practice Guidelines](#)[Administration and Storage Issues](#)[Medication Patient Education with
HCAHPS Considerations](#)[Medication Safety Issues](#)[Monograph](#)[Images](#)[Adult Patient Education](#)[Pediatric Patient Education](#)

Note: When used for managing moderate to severe pain, opioids may be part of a comprehensive, multimodal, patient-specific treatment plan for pain. Maximize nonopioid analgesia, if appropriate, prior to initiation of opioid analgesia (CDC [Dowell 2016]). Individualize dosing regimen based on patient-specific factors (eg, comorbidities, severity of pain, concomitant medications, cachexia, general condition, degree of opioid experience/tolerance) and titrate to patient-specific treatment goals (eg, improvement in function and quality of life, decrease in pain using a validated pain rating scale). Use the lowest effective dose for the shortest period of time (CDC [Dowell 2016]).

Dosage ranges (based on specific product labeling): **Oral:** Hydrocodone 2.5 to 10 mg every 4 to 6 hours as needed (maximum dose of hydrocodone may be limited by the acetaminophen content of specific product; refer to manufacturer's labeling); the dosage of acetaminophen should be limited to ≤4 g/day. Use the lowest effective dose. Start at the lower end of dosing range for opioid-naïve patients; for acute pain, use a low dose for ≤3 to 7 days (CDC [Dowell 2016]).

Discontinuation of therapy: **Oral:** When discontinuing chronic opioid therapy, the dose should be gradually tapered down. An optimal universal tapering schedule for all patients has not been established (CDC [Dowell 2016]). Proposed schedules range from slow (eg, 10% reductions per week) to rapid (eg, 25% to 50% reduction every few days) (CDC 2015). Tapering schedules should be individualized to minimize opioid withdrawal while considering patient-specific goals and concerns as well as the pharmacokinetics of the opioid being tapered. An even slower taper may be appropriate in patients who have been receiving opioids for a long duration (eg, years), particularly in the final stage of tapering, whereas more rapid tapers may be appropriate in patients experiencing severe adverse events (CDC [Dowell 2016]). Monitor carefully for signs/symptoms of withdrawal. If the patient displays withdrawal symptoms, consider slowing the taper schedule; alterations may include increasing the interval between dose reductions, decreasing amount of daily dose reduction, pausing the taper and restarting when the patient is ready, and/or coadministration of an alpha-2 agonist (eg, clonidine) to blunt withdrawal symptoms (Berna 2015; CDC [Dowell 2016]). Continue to offer nonopioid analgesics as needed for pain management during

Interactions

Print Help

Selected Items

Drugs

Enter drug name

- [Ambien CR](#)
- [Cymbalta](#)
- [Hydrocodone and Acetaminophen](#)

Allergies

Enter allergy name

None

Duplicate Drug Therapy

Interaction Analysis

B = No action needed **D** = Consider therapy modification

Drugs in this analysis: Ambien CR, Cymbalta, Hydrocodone and Acetaminophen

View interaction detail by clicking on link.

Drug-Allergy Interactions

No interactions identified in the database

Drug-Drug Interactions

- D** [Ambien CR \(Zolpidem\) - Hydrocodone and Acetaminophen \(CNS Depressants\)](#) *Depends on Brand Name*
- C** [Cymbalta \(Serotonergic Agents \(High Risk\)\) - Hydrocodone and Acetaminophen \(Opioid Agonists \(metabolized by CYP3A4 and CYP2D6\)\)](#)

Duplicate Therapy Interactions

No interactions identified in the database

Selected Items

Interaction Analysis

Interaction Monograph

Drugs

- [Ambien CR](#)
- [Cymbalta](#)
- [Hydrocodone and Acetaminophen](#)

Allergies

None

 Duplicate Drug Therapy

Title Serotonergic Agents (High Risk) / Opioid Agonists (metabolized by CYP3A4 and CYP2D6)

Risk Rating C: Monitor therapy

Summary Opioid Agonists (metabolized by CYP3A4 and CYP2D6) may enhance the serotonergic effect of Serotonergic Agents (High Risk). This could result in serotonin syndrome. **Severity** Moderate **Reliability Rating** Fair

Patient Management Monitor for signs and symptoms of serotonin syndrome/serotonin toxicity (eg, hyperreflexia, clonus, hyperthermia, diaphoresis, tremor, autonomic instability, mental status changes) when these drugs are combined. Patients with other risk factors (eg, higher drug concentrations/doses, greater numbers of serotonergic agents) are likely at greater risk for these potentially life-threatening toxicities.

Serotonergic Agents (High Risk) Interacting Members Amitriptyline; Amoxapine; Citalopram; ClomiPRAMINE; Dapoxetine; Desipramine; Desvenlafaxine; Dothiepin; Doxepin (Systemic); Doxepin (Topical); DULoxetine; Escitalopram; FentaNYL; Fluvoxamine; Imipramine; Levomilnacipran; Lithium; Lofepamine; Melitracen [INT]; Meperidine; Milnacipran; Mirtazapine; Moclobemide; Nortriptyline; Protriptyline; Sertraline; Sibutramine; TraMADol; TraZODone; Trimipramine; Tryptophan; Venlafaxine; Vilazodone; Vortioxetine **Exceptions (agents listed are discussed in separate interaction monograph[s] or are non-interacting)** FLUoxetine; Isocarboxazid; Linezolid; Methylene Blue; Nefazodone; PARoxetine; Phenelzine; Tranlycypromine

Find Drugs & Conditions

Enter a drug name, condition, pill imprint, etc.



Trending searches: [amlodipine](#), [gabapentin](#), [aspirin](#), [lisinopril](#), [amoxicillin](#)



Drugs & Medications



Pill Identifier



Interactions Checker



Side Effects

Browse Drugs

[Browse Conditions](#)

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[A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#)

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[New Drugs](#)

**Dental Office
Procedures
Managing Vulnerable
or Substance Use
Disorder Patients**

Considerations For Vulnerable Populations



Considerations in the Young

For adolescents through 24 years old, limit opioids to 8-12 tablets when needed (such as possibly with third molar extractions)

Codeine and Tramadol contraindicated in < 12 years old due to variability in metabolism

- Should be **avoided** in **12-17** age range

Geriatric

- May be more **sensitive** to **adverse** effects
- Increased potential for **falls**/fracture, **cognitive impairment**, and **constipation**
- **Clearance** may be **reduced**, resulting in a narrow therapeutic window and increasing the risk for respiratory depression or overdose (CDC [Dowell 2016])
- Lexicomp

Pregnant

- Opioids cross the placenta
 - May be associated with birth defects (including neural tube defects, congenital heart defects, and gastroschisis), poor fetal growth, stillbirth, and preterm delivery (CDC [Dowell 2016])
 - **[US Boxed Warning]: Prolonged use of hydrocodone during pregnancy can result in neonatal opioid withdrawal syndrome, which may be life-threatening**
 - Mothers who are physically dependent may give birth to infants who are also physically dependent
- Lexicomp

Breastfeeding

- Hydrocodone and the active metabolite hydromorphone are present in breast milk.
- The relative infant dose (RID) of hydrocodone (immediate release product) was calculated in one study to be 0.2% to 9% when compared to a weight-adjusted maternal dose of 44 to 423.2 mcg/kg/day.
- In general, breastfeeding is considered acceptable when the RID is <10 (Anderson 2016; Ito 2000). Cumulative exposure from hydrocodone and hydromorphone should be considered.
- Withdrawal symptoms may occur when maternal use is discontinued or breastfeeding is stopped.
- When maternal treatment with hydrocodone is needed, doses should not exceed 30 mg/day (ABM [Martin 2018]; ABM [Reece-Stremtan 2017]).
- In general, a single occasional dose of an opioid analgesic may be compatible with breastfeeding (WHO 2002), though not recommended by the manufacturer.

Babies (exposed to drugs in the womb)

- **Premature and underweight**
 - **Slow intellectual development,** possibly into adolescence
 - Negatively affects **behavior later in life**
 - May be **physically dependent**
- NIH Institute on Drug Abuse

AAOMS White Paper 2020

Opioid Prescribing: Acute and Postoperative Pain Management

- Pre-emptive NSAIDs may decrease the severity of postoperative pain
- Perioperative corticosteroid (dexamethasone) may limit swelling and decrease postoperative discomfort after third-molar extractions.
- A long-acting local anesthetic (e.g., bupivacaine, etidocaine, liposomal bupivacaine) may delay onset and severity of postoperative pain.
- Avoid starting treatment with long-acting or extended-release opioid analgesics.
- Providers should prescribe NSAIDs as first-line analgesic therapy, unless contraindicated. If so, prescribe acetaminophen as first-line analgesic therapy.
- NSAIDs and APAP, taken simultaneously, work synergistically to rival opioids in their analgesic effect, but dosage levels and times of administration should be carefully documented to prevent overdose.
- When indicated for acute breakthrough pain, consider short-acting opioid analgesics, starting with the lowest possible effective dose and the shortest duration possible

AAOMS White Paper 2020

Opioid Prescribing: Acute and Postoperative Pain Management

- Use PDMPs
- When deviating from these prescribing recommendations – or those required by state laws or institutions – document the justification for doing so
- Address exacerbations of chronic or recurrent pain conditions with non-opioid analgesics, non-pharmacological therapies and/or referral to specialists for follow-up, as clinically appropriate.
- Limit the prescriptions of opioid analgesics to patients currently taking benzodiazepines and/or other opioids because of the risk factors for respiratory depression.
- Inform patients that the recommended maximum daily dose of acetaminophen should not exceed 3,000 mg. To avoid potential APAP toxicity, an OMFS choosing to prescribe an opioid should consider one that is ibuprofen-based.
- Counsel patients that the recommended maximum daily dose of ibuprofen is 3,200 mg. Note: Higher maximal daily doses have been reported for osteoarthritis while under the direction of a physician.
- Educate patients on the expectations of postoperative pain management and the anticipated levels of relief.
- Do not prescribe acetaminophen with codeine to treat pain in children younger than 12.

DENTIST'S ROLE
IN PREVENTING
DIVERSION

Recognizing an Abuser

Common Characteristics

- Unusual behavior in **waiting room**
- **Assertive** personality, often demanding immediate action
- Unusual **appearance** - extremes of slovenliness or over-dressed

Common Characteristics

- Unusual **knowledge** of controlled substances
- Medical history with **textbook** symptoms
 - **OR** evasive or vague answers to questions regarding medical history
- **Reluctant** or unwilling to provide **reference** information
 - Usually has **no** regular **doctor**
 - Often **no** health **insurance** (or claims not to have any)

Common Characteristics

- Requests a **specific** controlled drug and reluctant to try a different drug
- No interest in **diagnosis**
 - **Fails** to keep appointments for further diagnostic tests
 - **Refuses** to see another practitioner for consultation
- **Exaggerate** medical problems and/or **simulate** symptoms

Common Characteristics

- Mood disturbances
- Suicidal thoughts
- Lack of impulse control
- Thought disorders



FIGURE 6: Scars resulting from subcutaneous injection of cocaine (skin popping)

- Must be seen **right away**
- Wants appointment toward **end** of office hours
- Calls or comes in **after** regular hours
- States he/she's **traveling** through town, visiting friends or relatives (not a permanent resident)

- States that specific non-narcotic analgesics do **not work** or that **allergic** to them
- Claims to be a patient of a **practitioner** who is
 - Currently unavailable or
 - Will not give the name of a primary or reference physician

- Deceives the practitioner, such as
 - Requesting refills more **often** than originally Rx'd
- **Pressures** the practitioner by
 - Eliciting sympathy or guilt or
 - Direct threats
- Utilizes a **child** or an **elderly** person when seeking pain medication

What to Do When Confronted By An Abuser

What to do when confronted by a possible abuser

- Perform a thorough exam appropriate to the condition
- Document exam results and questions you asked the patient
- Request picture I.D., or other I.D. and Social Security number. Photocopy these and include in patient's record

What to do when confronted by a possible abuser

- Call a previous practitioner, pharmacist or hospital to confirm patient's story
- Confirm a telephone number, if provided by the patient
- Prescribe limited quantities

What NOT to do when confronted by a possible abuser

- "Take their word for it" when you are suspicious
- Rx just to get rid of drug-seeking patients
- Rx controlled substances outside the scope of your practice or in the absence of a formal practitioner-patient relationship

RESPONDING TO OVERDOSE

Overdose (ex: hydrocodone/APAP)

Hydrocodone component:

- Cold/clammy/blue or grayish skin
- Severe drowsiness → coma
- Cardiac arrest
- Bradycardia
- Respiratory suppression or gurgling
- Hypotension

Acetaminophen component:

- Nausea and vomiting
- Profuse sweating
- Yellowing of skin/whites of eyes
- Mental confusion, irritability
- Diarrhea
- Discoloration of urine

CHECK FOR A RESPONSE

- **Shake** them and **shout** to wake them up.
- If no response, grind your **knuckles** into their chest bone for 5-10 seconds.
- If the person still does not respond, call **911**.

CALL 911

- Tell the 911 **dispatcher**, “I think someone has **overdosed!**”

How to give Narcan[®] (naloxone) Nasal Spray

- Take Narcan[®] Nasal Spray out of **box**.
- **Peel** back **tab** with the circle to open the Narcan[®] Nasal Spray.
- **IMPORTANT:** Do not remove Narcan[®] until ready to use and do **NOT** test the device.

How to give Narcan[®] Nasal Spray

- Hold the Narcan[®] Nasal Spray with your **thumb** on the **bottom** of the plunger and your first and middle fingers on either side of the nozzle.

How to give Narcan[®] Nasal Spray

- **Tilt** the person's **head back** and provide **support** under the **neck** with your hand.

How to give Narcan[®] Nasal Spray

- Gently insert the tip of the nozzle into **one nostril**, until your **fingers** on either side of the nozzle are **against** the bottom of the person's **nose**.
- **Press the plunger firmly** to give the dose of Narcan[®] Nasal Spray. Remove the Narcan[®] Nasal Spray from the nostril after giving the dose.

How to give Narcan[®] Nasal Spray

- Wait and watch the person closely.
- If the person does **not respond in 2-mins**, repeat the steps and give the **second dose** of Narcan[®] Nasal Spray in box.

How to give Narcan[®] Nasal Spray

- Call **911** right away, **if you have not done so already.**
- Roll the person **on their side** and place them in the '**recovery position**'

If the person is **not breathing**, perform **CPR**

Caring for someone after you give Narcan[®]

- When the person wakes up, explain what happened. Tell them not to take any more drugs because that could cause another overdose.
- Naloxone, the medicine in Narcan[®], **wears off in 30 to 90 minutes. Stay with the person until they go to the hospital, or until the naloxone wears off**, to make sure they do not overdose again.
- **If you do not seek medical care, stay with the person for at least 3 hours** and watch for signs of returning overdose. Call **911** if the person is **not OK when they wake up**.
- When the **ambulance** arrives, **tell** them that **naloxone** has been given.
- If you need to leave, turn the person on their side (recovery position) to prevent them from choking.
- Go back to the program that trained you or to a pharmacy, tell them you used the kit and get more naloxone.

ABUSE-

DETERRENT

PHARMACOLOGY

Routes of Misuse and Abuse

Swallowing intact tablets

Chewing

Smoking

Snorting

Injecting



As a general framework, the FDA has categorized abuse-deterrent properties as follows*:

PHYSICAL/CHEMICAL BARRIERS

Barriers change the physical form of an oral drug

Making manipulation more difficult and abuse less likely

Physical barriers can prevent chewing, crushing, cutting, grating, or grinding.

Chemical barriers can resist being dissolved in water, alcohol or other organic solvents that allow the opioid to be extracted for injection

PHYSICAL/CHEMICAL BARRIERS

Hysingla ER

- Hydrocodone 20 mg – 120 mg
- Taken once daily
- Utilizes RESISTEC technology
- Unique polymer and processing
- Makes the tablet difficult to
 - Crush
 - Break
 - Dissolve
- Forms a viscous gel when dissolved in aqueous solutions, making injection difficult

PHYSICAL/CHEMICAL BARRIERS

Zohydro ER

- Hydrocodone 10 mg – 50 mg
- Taken q12h
- Utilizes BeadTek technology
- Combination of **indistinguishable** mix of
 - **Inactive beads**
 - Maintain the **12hr** release properties of the drug when taken as directed
 - Immediately form a viscous **gel** when **crushed** or **dissolved** in liquids or solvents
 - **Active immediate-release beads**
 - Active **extraction-resistant** hydrocodone beads

PHYSICAL/CHEMICAL BARRIERS

- Exalgo
 - Hydromorphone 8mg – 32 mg
 - Utilizes the tamper-resistant technology OROS
 - **Crush and extraction resistant**

PRODRUG

Lacks opioid activity until processed in the gut or gastrointestinal tract

Making the drug unattractive for injection or snorting

Example: Codeine

AVERSION

Substances can be combined to produce an unpleasant effect if the drug is altered

- Burning sensation to the skin or nose

DELIVERY SYSTEM

The way a drug is delivered may help to deter abuse

- Implants can be more difficult to manipulate.
- Sustained-release formulation that is administered intramuscularly

Extended Release

Drug abusers prefer these:

- Crush, snort, chew, vape, or inject total dose
- **Higher concentration**
 - So more easily snorted with **minimal discomfort**
 - Extra **excipients** (inactive ingredients for stability, bulk, enhancement) cause **discomfort when snorting**

Extended-release:

- **Controlled Release: Constant** amount released, regardless of concentration. Usually dosed **once daily**.
- **Sustained-release:** Release is slow, but not amount **not constant**. Usually dosed more than once daily (eg, **BID**)

TREATMENT
FOR ADDICTION

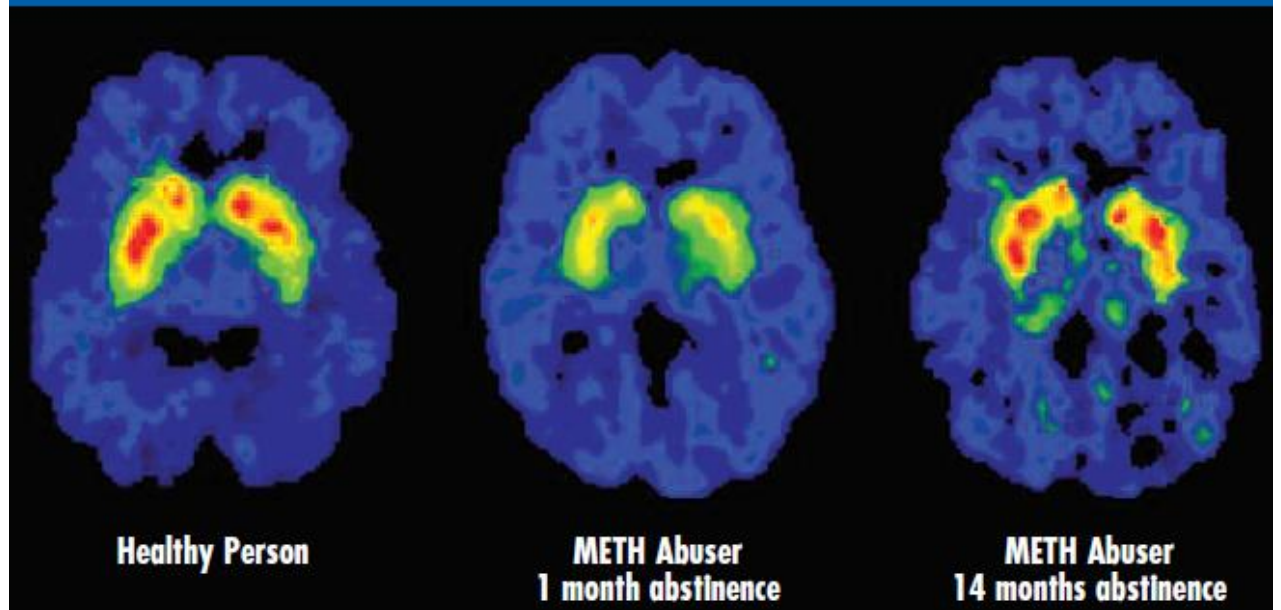
Treatment for Addiction

- Can it be treated **successfully**?
 - Yes
- Can it be **cured**?
 - Not always
 - Like many chronic diseases, it can be managed successfully

Greater Activity

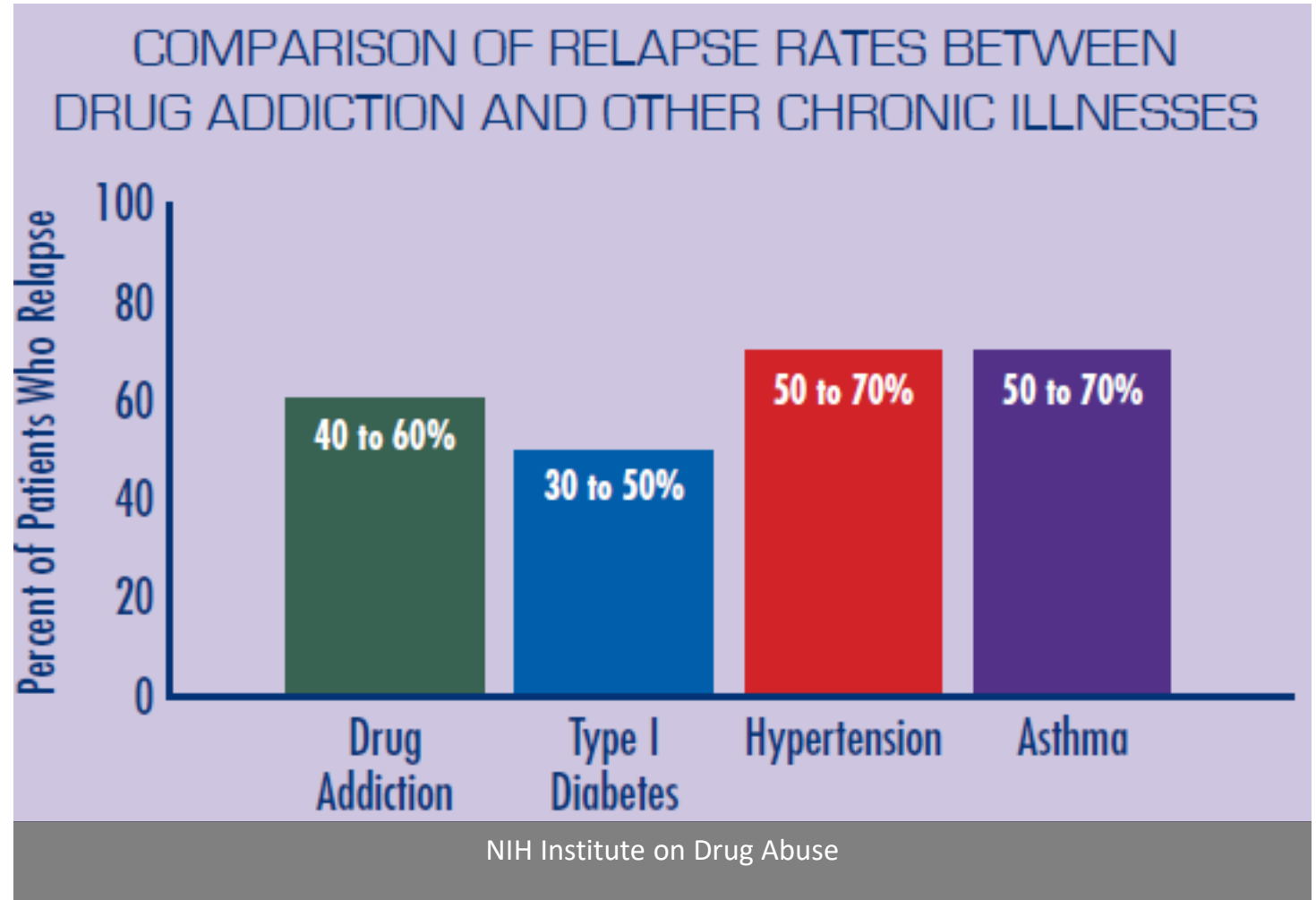
Less Activity

BRAIN RECOVERY WITH PROLONGED ABSTINENCE



Treatment for Addiction

- **Relapse** at some point is likely
 - As with many **chronic illnesses** under treatment
 - **Similar** rates to diabetes, HTN, asthma
 - All require changes in **deeply-embedded behaviors**



Treatment for Addiction

Cognitive Behavioral Therapy - help recognize, avoid, and cope with situations in which they are most likely to abuse drugs.

Contingency Management - positive reinforcement such as providing rewards or privileges for remaining drug free, for attending and participating in counseling sessions, or for taking treatment medications as prescribed.

Motivational Enhancement Therapy - uses strategies to evoke rapid and internally motivated behavior change to stop drug use and facilitate treatment entry.

Family Therapy (especially for youth) - approaches a person's drug problems in the context of family interactions and dynamics that may contribute to drug use and other risky behaviors

Medication-Assisted Treatment

Medication is often **paired with therapy** to **control** the pull of **withdrawal** and **cravings**

Naltrexone

- Blocks opioid receptors, preventing euphoria and sedation
 - Works like naloxone
- Triggers withdrawal if still physically dependent on opioids
 - Must refrain from opioids for a minimum of 7-10 days before taking Naltrexone
- No withdrawals or cravings when stopping naltrexone
- Reduces, but may not stop, cravings
 - Highest success when already completed withdrawal stage and motivated to continue recovery
- May be more sensitive to lower doses of Opioids after taking Naltrexone, so avoid drugs at conclusion of medication-assisted treatment.

Naltrexone

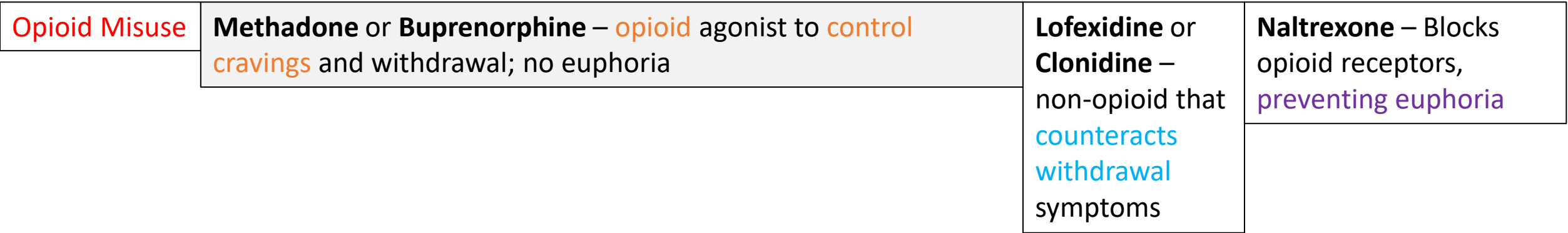
- Tablet (ReVia, Depade)
 - The form most used
 - Taken at home or in a treatment center setting



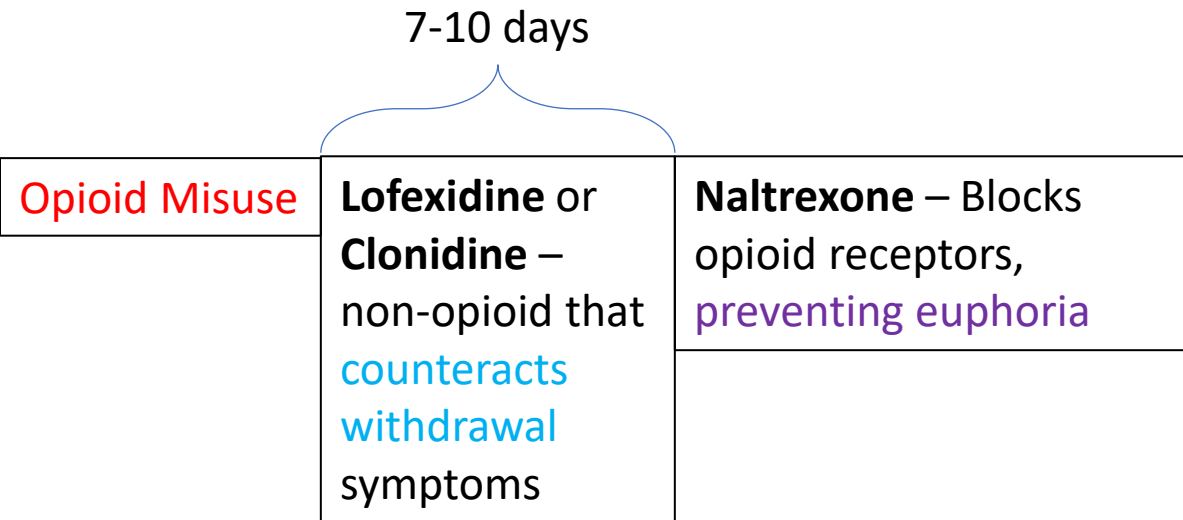
Naltrexone

- Extended-release injectable (Vivitrol)
 - Becoming more popular.
 - Monthly, intramuscular
 - Administered in clinic setting

Slower, but less severe withdrawal, and less relapse:



Faster, but more severe withdrawal, more relapse:



Methadone

Synthetic *opioid agonist* that acts on the same receptors as other opioids (heroin, morphine, etc) to

- Eliminate withdrawal symptoms
- Relieve drug cravings

Occupies and activates opioid receptors more slowly than other opioids

Does **not** produce **euphoria**

High risk for overdose if combined with other opioids, benzodiazepines, alcohol

Must be dispensed through specialized opioid treatment programs

Buprenorphine

Partial opioid agonist (binds to same opioid receptors but activates them less strongly than full agonist)

!(So less risk for overdose)

Reduce cravings and withdrawal symptoms in SUD without producing euphoria. Efficacy similar to methadone for SUD

Unlike methadone, can be prescribed by certified physicians (rather than just in a program)

Tablet, sublingual film, subdermal, once-monthly

Lofexidine

Alpha-2-adrenergic agonists, traditionally used for HTN and anxiety (includes clonidine)

- Unlike clonidine, this is less likely to cause low BP
- Cause sedation, mild pain relief, and relaxation (withdrawal symptoms)
 - Less sedating than clonidine

More expensive than clonidine

Clonidine

Antihypertensive, blocking sympathetic activity in brain, reducing sweating, hot flashes, watery eyes, restlessness, anxiety.

Can stop using Opioids immediately to prepare for Naltrexone induction

Does not produce the same euphoria as opioids

Tablet given every few hours on first day, then dose adjusted over next several days depending on symptoms. By end of the week, withdrawal symptoms start to subside. Tapering off clonidine begins.

Patch on skin with little hair such as the (upper outer arm or upper chest). 2 days to reach steady state, so the first couple days may include tablet. Course typically 7 days but if withdrawal symptoms continue, may use patch longer.

Roughly 7 days to complete the entire detoxification process while on Clonidine.

Both forms require check-ins with doctor frequently to monitor pulse and BP, so most effective when used in an inpatient setting so side effects can be observed under close supervision

Thank
you

