Optometric Education Consultants

Treatment of Pain
Opioid Choices and Considerations

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Phoenix, AZ
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Disclosures- Greg Caldwell, OD, FAAO

All relevant relationships have been mitigated

- Lectured for: Alcon, Allergan, Aerie, B&L, BioTissue, Kala, Maculogix, Optovue, RVL, Heru, Santen
  - Disclosure: Receive speaker honorariums
- Advisory Board: Allergan, Alcon, Dompe, Eyenovia Tarsus, Visus
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- Envolve: PA Medical Director, Credential Committee
- Healthcare Registries – Chairman of Advisory Council for Diabetes and AMD
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Course Description

- This course will describe how to appropriately choose a pain medication based upon individual patient and drug factors.
- Additionally, opioid medications will be evaluated in terms of risk versus benefit, with an emphasis on pain levels and the potential for addiction.
- Case anecdotes will include management of ocular pain, with specific emphasis on oral/systemic medications and how to protect both patient and practitioner.

Learning Objectives

- When given a patient case, choose an appropriate pain treatment plan for the management of ocular pain, in terms of drug choices based on pain level, dosing issues, and a monitoring plan for efficacy and toxicity.
- Identify and describe some of the potential signs, symptoms, and behaviors associated with opioid or substance abuse, and describe ways to respond to this issue.
- List systems available to evaluate a patient for potential opioid/substance abuse.
- Describe the treatment issues and options associated with the treatment of ocular pain in a patient with a drug abuse history.

Two major types of pain:

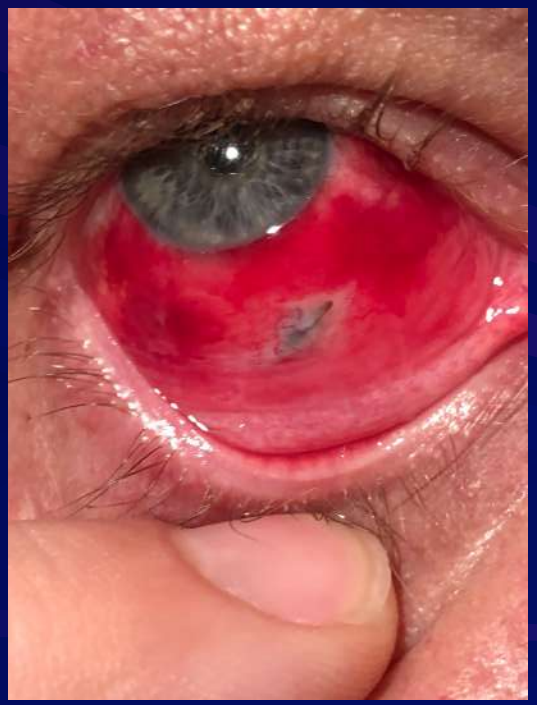
Nociceptive Pain – normal processing of stimuli that damages normal tissues; how pain becomes conscious;

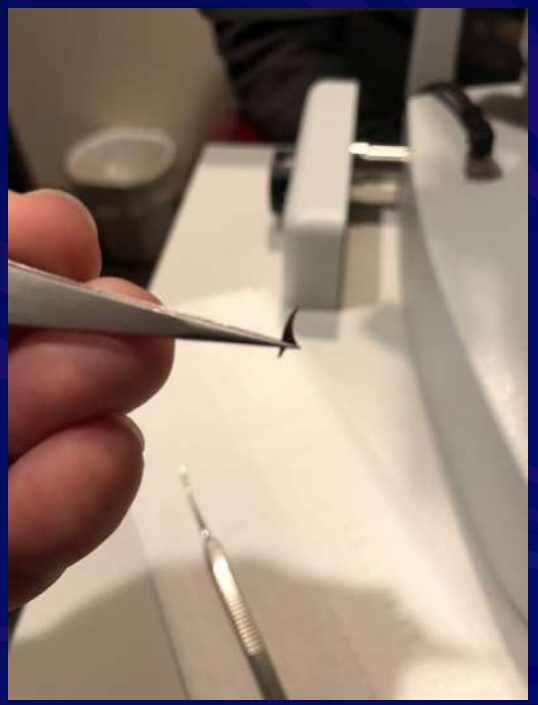
* responsive to non-opioids
    * examples: NSAIDs, acetaminophen, steroids
* responsive to opioids
    * examples: codeine, hydrocodone, tramadol

Neuropathic: abnormal processing of sensory input by the peripheral or central nervous system;

* treatment includes adjuvant analgesics
    * sleep aids, nerve pain meds, muscle relaxers, anxiolytics

Nociceptove Pain- I was hit in the eye with a tree branch, and I think my eye is scratched



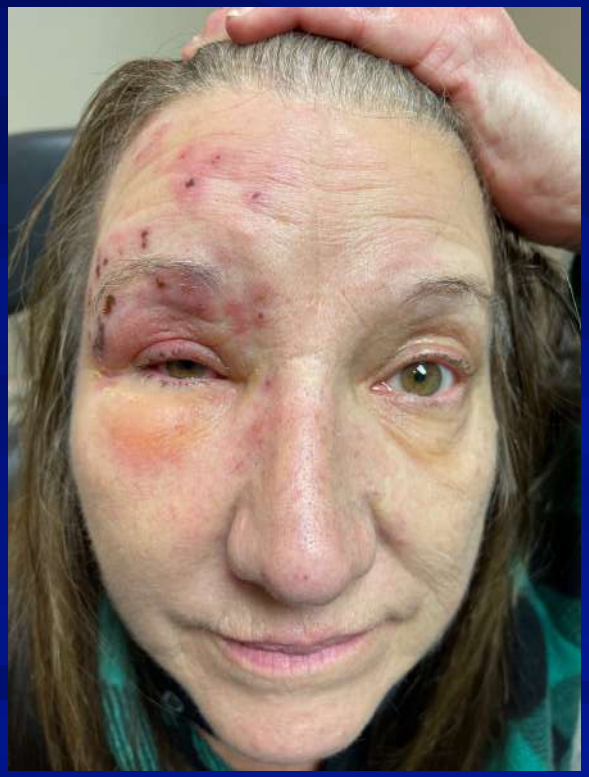


Nociceptive Pain- Healing Well

Pain is Complex and Confusing

Nociceptive Pain and Neuropathic Pain

February 9, 2022



Zoster

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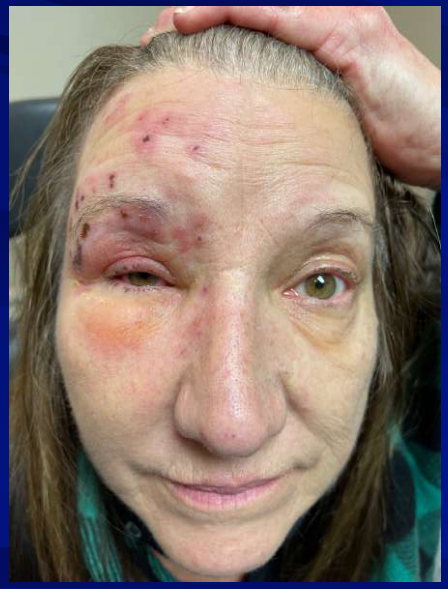

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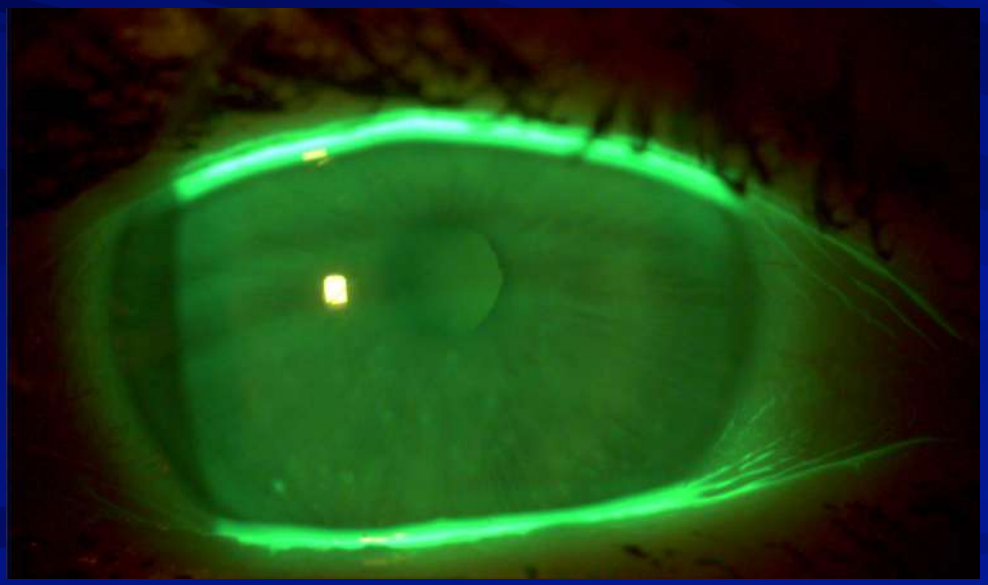
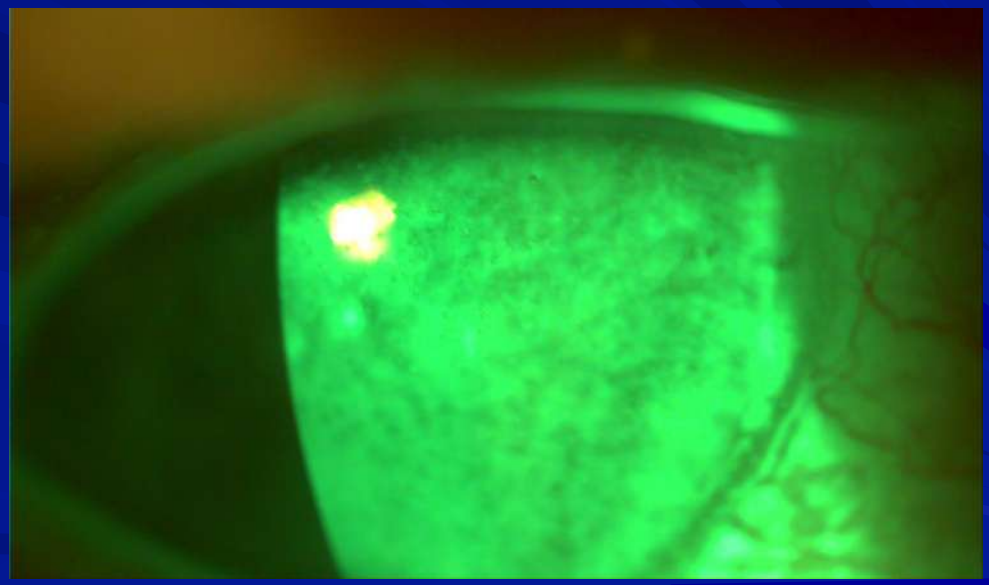
Not to Confused with

Neurotrophic

Stain Without Pain!

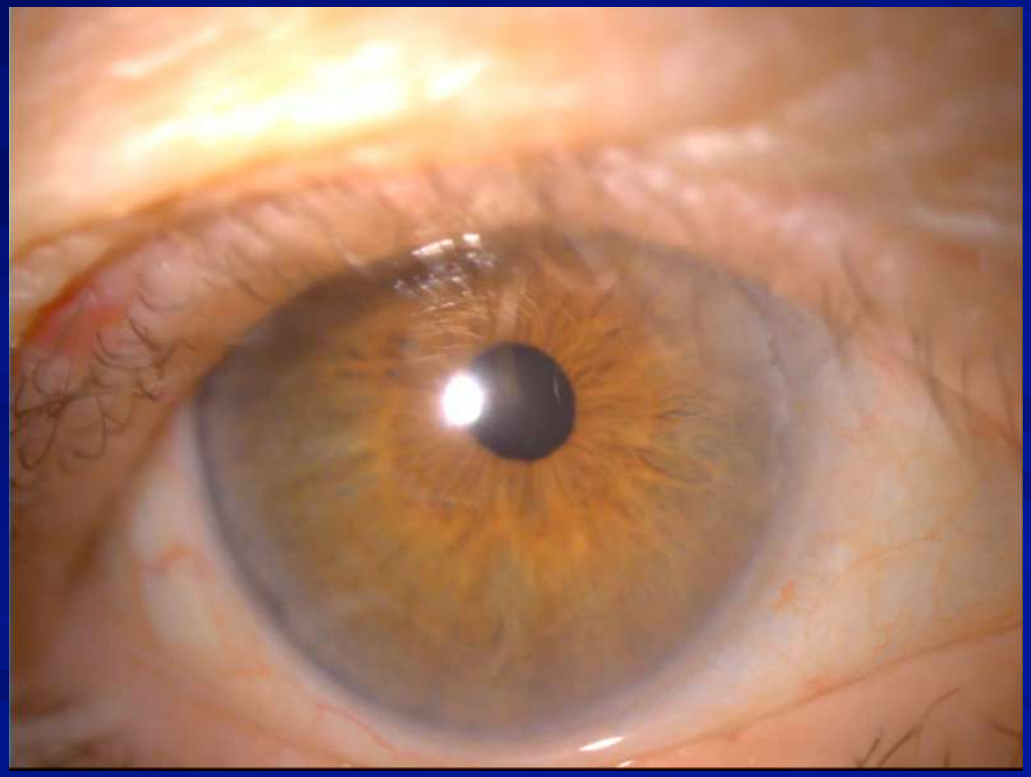
Actually, the OS is More Comfortable – What?



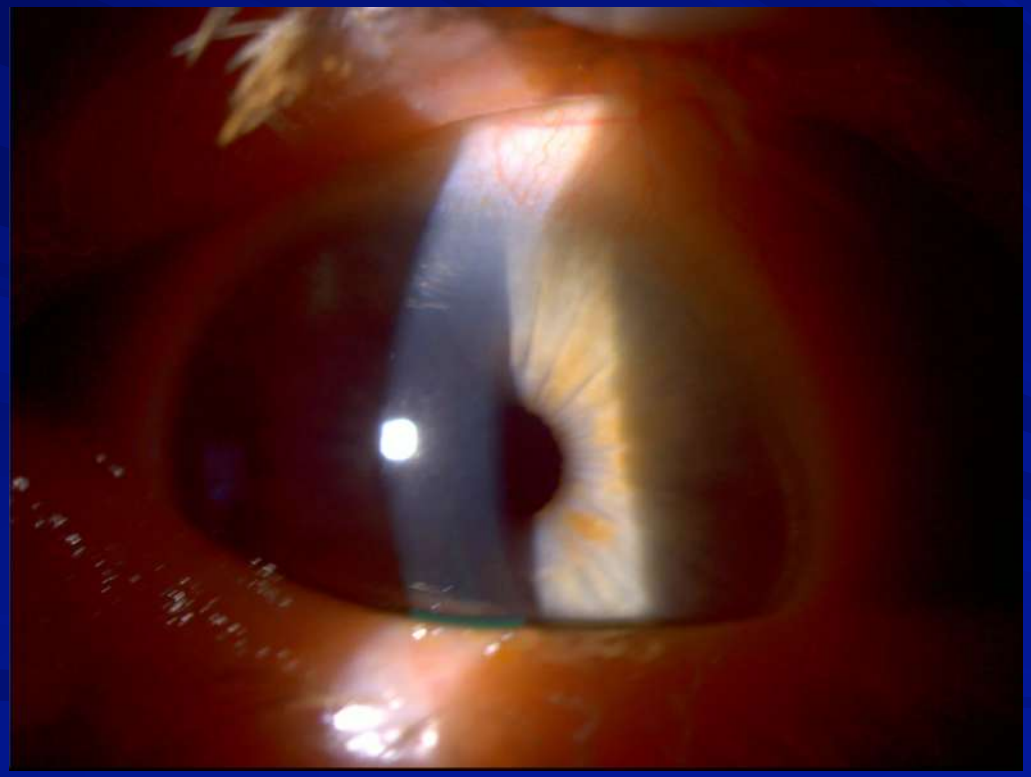


Corneal Sensitivity Testing

Cornea Sensitive Testing – Another Patient



Cornea Sensitive Testing – Yet Another Patient



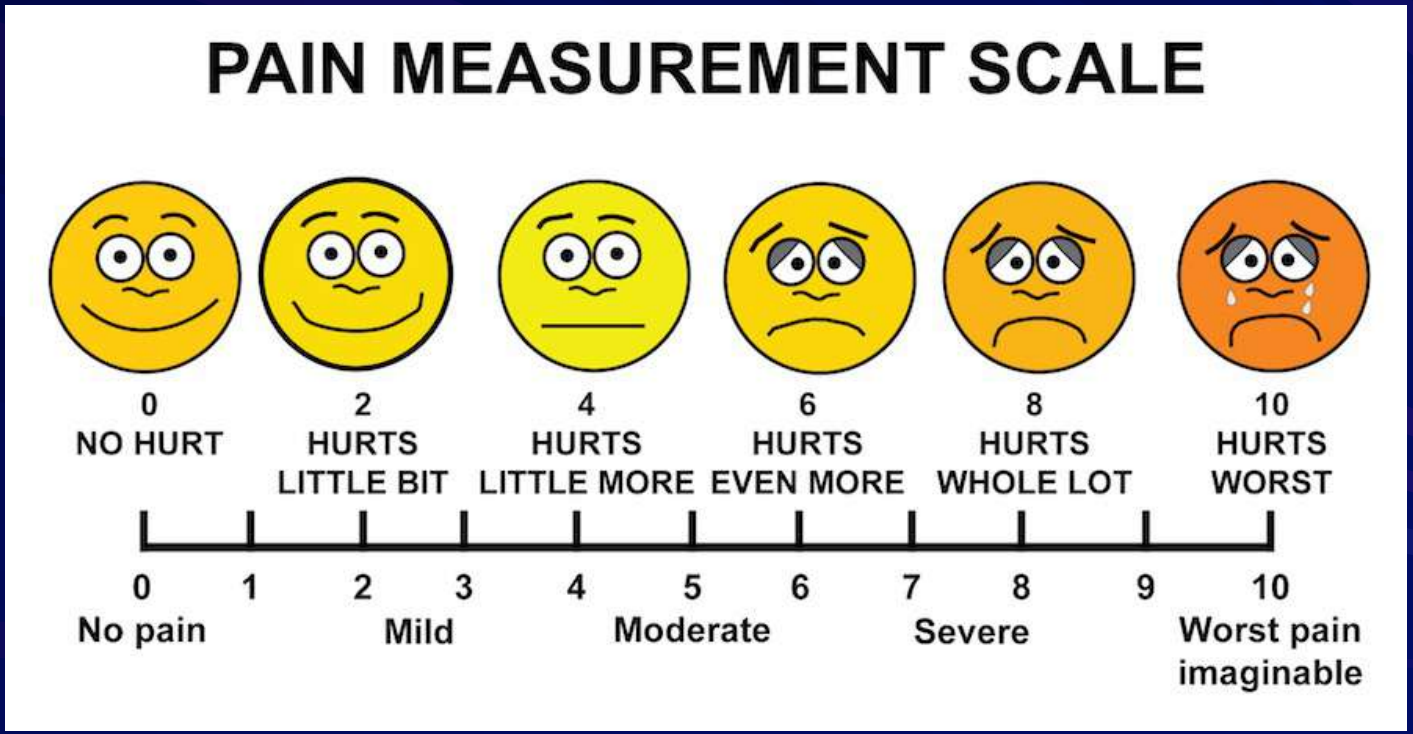
Drug Treatment Options…Neuropathic Pain

- Why is this relevant?
- Adjuvants – means "add on" medications
  - Some of them have addiction potential
    - Anti-seizure medications that address nerve damage/inflammation
      - MOA: work on the GABA system – similar to benzodiazepines (ex. Xanax)
      - Gabapentin (Neurontin) – controlled substance in multiple states
      - Pregabalin (Lyrica) – controlled substance in all 50 states
    - Anti-anxiety and sleep medications
      - Zolpidem (Ambien)
      - Alprazolam (Xanax), Lorazepam (Ativan), Diazepam (Valium)

Pain Assessments and Scales

- Adds objective data to a patient's feeling of pain
  - It is a subjective problem to assess!
  - Remember…no patient should needlessly suffer!
- "Does the injury or wound or diagnosis fit the patient's presentation?
  - It is important to be able to assess the degree of pain in a patient.

Combination Pain Scale…



Drug Treatment Options… Nociceptive Pain

3 Groups of analgesics

- Non-opioids
  - Acetaminophen (Tylenol)
  - NSAIDs (Ibuprofen, naproxen sodium)
  - Glucocorticosteroids (methylprednisolone, prednisone)

- Opioids –
  - Codeine (Tylenol with codeine)
  - Hydrocodone (Vicodin)
  - Tramadol (Ultram)

Controlled Substance Schedules

Schedule I – not considered to be medically necessary, research only

- Heroin
- "Medical" Marijuana
  - State control of marijuana and CBD
- LSD
- Mushrooms
- Ecstasy

Schedule II – more likely to be abused (as compared to Schedule III, IV, V)

- Opioids, AKA "Narcotics"
  - Oxycodone (OxyContin)
  - Hydrocodone (Vicodin, Lorcet, Norco)
  - Morphine (MSContin, MSIR)
  - Hydromorphone (Dilaudid)
  - Methadone
  - Fentanyl (Duragesic)

- ADD/ADHD meds:
  - Methylphenidate (Ritalin)
  - Mixed amphetamine salts (Adderall)

Controlled Substance Schedules

Schedule III - Safer, less likely to be abused (as compared to Schedule II)

- Combination products with APAP or ASA (codeine)
- Esketamine – nasal spray for treatment resistant depression

Schedule IV – Safer, less likely to be abused (as compared to Schedule II and III)

- Tramadol (Ultram)
- Benzodiazepines (lorazepam, diazepam, oxazepam)
- Sleep agents (zolpidem, etc.)

Schedule V – safest, least likely to be abused

- Expectorants with codeine

Opioids "narcotics"

- Mainstay of therapy for the treatment of pain
- NO maximum daily dose limitation
- Useful for acute and chronic pain

Morphine Products

Morphine

- ★ Standard for comparison of other agents

- **MSIR** (IR caps) (q 3-4 hours prn)

- **MS Contin** (CR tabs) (q 8–12 hours)
- **Kadian** (CR caps) (q 12 – 24 hours)
- **Avinza** (CR caps) (q 24 hours)

Hydromorphone Products

Hydromorphone (Dilaudid) tablets – immediate release

Hydromorphone ER (Exalgo) tablets – extended release

- Used for severe pain

Codeine-Based

- Codeine – C3; Schedule III
- Hydrocodone – C2; Schedule II
- Oxycodone – C2; Schedule II

Codeine tablets

- WEAK analgesic: commonly used, so MOST have heard of it!
- Add acetaminophen/aspirin – Schedule III
  - **Tylenol #3** = 300 mg acetaminophen & 30 mg codeine
- Add expectorant – Schedule V
  - If you think someone won't try to get their hands on "codeine cough syrup" as a drug of abuse, you'd be surprised!!!

Oxycodone Products

Long-Acting, Extended-Release

OxyContin

Immediate Release; short-acting tablets

OxyIR (IR cap)
Roxicodone solution

with Acetaminophen:
Percocet and Endocet (oxycodone/APAP dose)

OxyCONtin (Controlled release tablets (q 12 hours…once in a while q 8 hours); new formulation is out to help control abuse

Manual Crushing Followed by Dissolution

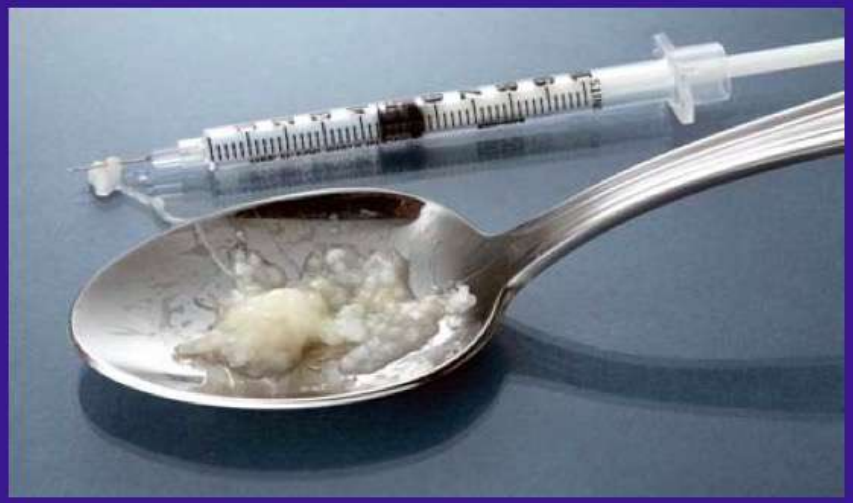
Crushed New Formulation

Crushed Original Formulation

Tampering for IV Abuse

- New formulation results in gelatinous material which cannot be drawn into a syringe for injection (the syringe is empty)

New formulation



Original formulation

Hydrocodone Products

- Immediate-Release Products:

AS OF AUGUST 2014, hydrocodone products are ALL CII!!

Hydrocodone 7.5 mg + IBU 200 mg (Vicoprofen)

Hydrocodone + acetaminophen:
- **"Vicodin"** 5/300; 7.5/300; 10/300
- Lortab = 2.5/300, 5/300, 7.5/300, 10/300
- Norco = 5/325, 7.5/325, 10/325

Miscellaneous

- **Fentanyl Patch** (Duragesic)
  - MOST potent opioid
  - Black Box Warning against use in acute pain and in opioid naïve patients
- **Methadone**
  - Typically reserved for morphine/codeine allergic patients

Methadone tidbits…

- Chronic pain or opioid abuse deterrent
- 2-phase elimination
  - Alpha phase = 8 hrs
    - Offers pain control
  - Beta phase = 16+ hrs
    - Mitigates withdrawal symptoms
- Patient 1: On a short-acting pain med = likely being used to treat chronic pain
  - Twice per day dosing
- Patient 2: On methadone ONLY; lower doses
  - Once daily dosing

Tramadol

Tramadol (Ultram) tabs

Tramadol with 325 mg APAP (Ultracet), Tramadol ER tabs

- Dual action: **mu** receptors & inhibits neuronal uptake of **serotonin** & **norepinephrine**
- Lowers seizure threshold; increases serotonin levels
  - watch drug interactions with other meds that ↑ serotonin
    - Selective serotonin reuptake inhibitors (SSRIs): fluoxetine/Prozac
    - Migraine meds ("triptans"): sumatriptan/Imitrex
  - AS OF AUGUST 2014, NOW A C4 (Schedule IV)
  - "tramies" = abuse potential; helps decrease withdrawal symptoms

Opioid Allergies

- If a patient states "codeine allergic", ask appropriate questions…
  - "You have indicated that you have an allergy to codeine, can you describe what happens when you take codeine?"
    - This is SIGNIFICANT, because if a patient is truly allergic to codeine, then they are most likely allergic to morphine, hydromorphone, oxycodone, hydrocodone, and tramadol
    - AND…if they had an opioid IV after surgery, then their "reaction" may have been due to histamine release…
      - NOT always an allergic reaction

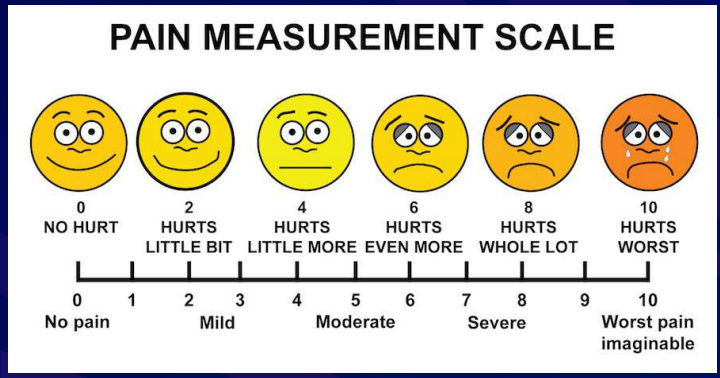
Opioid Allergies

- DO YOU KNOW WHAT A PATIENT CAN TAKE?
  - Fentanyl
  - Methadone
  - Meperidine
- Assessing "allergies" appropriately helps practitioners sort through ACTUAL allergy potential and "placebo allergies"
  - Fear versus drug seeking

Specific Medications Using Numeric Pain Scale

Mild pain = 1 – 3

- Acetaminophen (APAP; Tylenol)
- Ibuprofen (Advil, Motrin)
- Naproxen sodium (Aleve)
- Tramadol (Ultram) - low dose



Moderate pain = 4 – 6

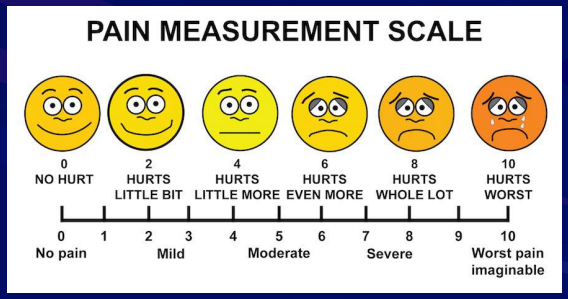
- Tramadol (Ultram) – mid to high dosing
- Tylenol with codeine (Tylenol #3)
- Acetaminophen with oxycodone (Percocet)
- Acetaminophen with hydrocodone (Vicodin, etc.)

Specific Medications Using Numeric Pain Scale

Severe pain = 7 – 10

- Tylenol with hydrocodone (Vicodin, etc.) – higher doses
- Tylenol with oxycodone (Percocet, etc.) – higher doses

- Morphine (MSIR)
- Hydromorphone (Dilaudid)
- Fentanyl (Duragesic patch; Actiq lozenge on a stick)



Opioid Effects/ADRs

- Sedation
- Euphoria – mu receptors
- Dysphoria/Hallucinations
- Pruritis – allergy versus normal release of histamine
- Nausea/vomiting
  - Triggers CTZ
  - Codeine “allergy”

Opioid Effects/ADRs

- Confusion
- Miosis
- Respiratory depression – this is what kills a patient
  - *Mixing opioids with other CNS depressants*
    - Alcohol
    - Benzodiazepines
    - Muscle relaxers
    - Sleep agents
    - Antihistamines
    - Anti-seizure medications

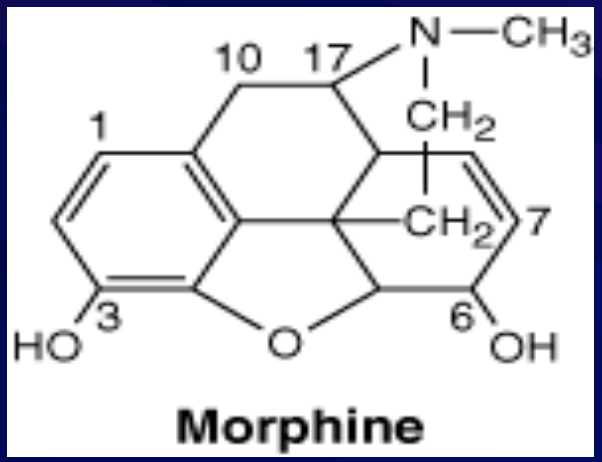
Opioid Effects/ADRs

- Withdrawal symptoms:
  - Short half-life agents are more likely to cause abrupt withdrawal symptoms
  - Sweating
  - High sympathetic tone: increase in heart rate and blood pressure, mydriasis
  - Agitation
  - Irritation
  - Irrational behavior
  - Symptoms disappear with (immediate) use of an opioid

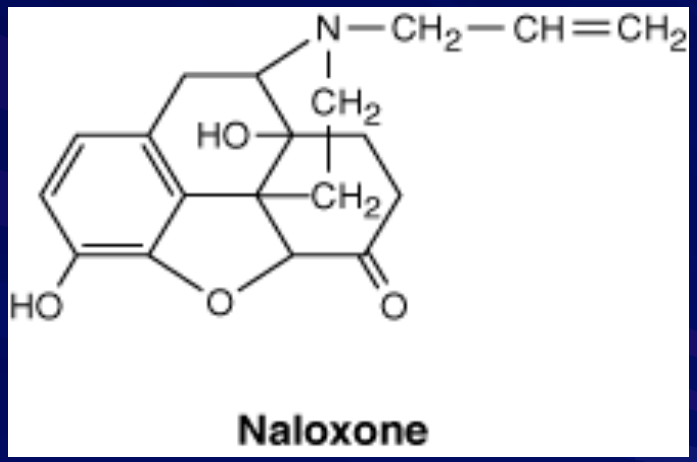
Opioid Antagonists

Naloxone (Narcan) & Naltrexone (ReVia)

* Used to treat opioid overdose



Morphine



Naloxone

Mixed Opioid Agonist-Antagonist

- Exhibit partial agonist or antagonist activity at the opioid receptors
- Agonist/Antagonist combinations for the TREATMENT of chronic pain
  - NOT appropriate for the treatment of acute pain
  - Morphine/Naltrexone (Embeda)
  - Oxycodone/Naltrexone (Troxyca ER)
- Schedule II controlled substance

Mixed Opioid Agonist-Antagonist

- Exhibit partial agonist or antagonist activity at the opioid receptors

Agonist/Antagonist combinations for the TREATMENT of opioid abuse/addiction

- **Buprenorphine (Buprenex)**
- Buprenorphine/Naloxone (Suboxone)

- **Schedule III**

- Adverse effects
  - Less respiratory depression & less abuse potential?

- Precipitate withdrawal in an opioid-dependent patient

Painful Ocular Problems – things to consider…

- Acute or chronic?
  - YOU are in charge!
  - Legal and ethical issues – do not allow yourself to be bullied by the patient!
- Work with other practitioners!
- Only a pain specialist should write RXs for CII medications for chronic pain issues
  - If something looks suspicious, then make inquiries! Especially before you write an RX for a drug that can be abused and/or sold!

Painful Ocular Problems – things to consider…

- Use the tools that are available!
  - State databases
    - **PDMP** = Prescription Drug Monitoring Program
  - Pharmacists

Tolerance

- Escalation of dose to maintain effect (analgesia or euphoria)
  - Happens to everyone
- Regarding euphoria = may be life threatening because respiratory depression does not show much tolerance

"True Addiction" (formerly "psychological dependence")

- Compulsive use despite harm
- Many times triggered by cravings in response to specific cues
  - Lifestyle is geared to the acquisition of the drugs
  - Borrowing from others, injecting oral formulations, prescription "loss", requesting specific drugs (not always a sign…as some drugs just work better)
- Quality of life is not improved by the medication and eventually it becomes compulsive ("wanting without liking")
- Relapse is very common even after "successful" withdrawal…it is a relapsing disease that is incredibly hard to treat

Identifying Behaviors of Abuse/Addiction

- New patients that don't seem to "fit"
- "fast talkers"
- Strange allergies
- Excuses for "loss" of meds or why they need "a strong pain medication"

Ways to respond

- Avoid getting "bullied"
- Avoid acting like you are judging the patient

- State data bases
  - Call your local pharmacy/pharmacist

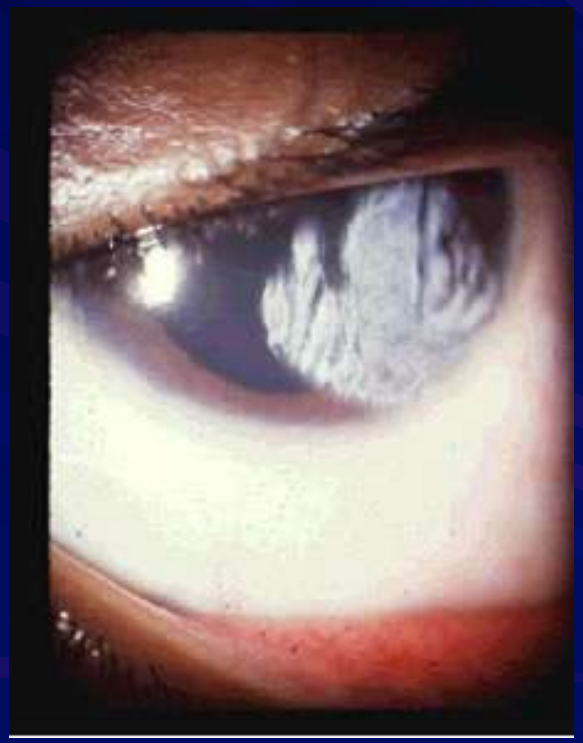
- Legal/ethical issues
  - If you didn't write it down, then it didn't happen!
  - If you accidentally give an addict a script for a pain medication, you won't get into "trouble"…

Substance abuse history…

- Avoid all opioids in a patient with a history of heroin use
  - This includes tramadol
  - May trigger dopamine reward and the drug "need"
  - Stick with higher doses of a NSAID +/- acetaminophen
- Patients with abuse history for other substances (ex. Benzodiazepines, alcohol, amphetamines)?
  - It is a judgement call
  - Some evidence to suggest that all addictive meds should be avoided!

Conditions Which May Require Pain Management

- Large cornea abrasions
  - Cornea burn
  - PRK/PTK
- Orbital trauma
- Orbital blowout fractures
- Scleritis



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Questions and Thank You!

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