# Pain management, Identification of Addiction, Practices of Prescribing, and Dispensing of Opioids

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Disclosure Statement (next slides)

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## Disclosures- Greg Caldwell, OD, FAAO

- Will mention many products, instruments and companies during our discussion
  - I don' t have any financial interest in any of these products, instruments or companies
- Pennsylvania Optometric Association –President 2010
  - POA Board of Directors 2006-2011
- American Optometric Association, Trustee 2013-2016
  - Thank you to the members and those who join
- I never used or will use my volunteer positions to further my lecturing career
- Lectured for: Shire, BioTissue, Optovue, Alcon, Allergan, Aerie
- Advisory Board: Allergan, Sun, Takeda
- Envolve: PA Medical Director, Credential Committee
- OCT Connect on Facebook – Administrator with Dr. Julie Rodman
- Optometric Education Consultants- Scottsdale, Quebec City, and Nashville - Owner

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## Disclosures: Tracy Offerdahl

- Dr. Offerdahl has the following financial disclosure:
  - Boiron: honorarium, webinar/speaker
- Has not received any assistance from any commercial interest in the development of this course

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## Course Description

- This is an oral pharmacology course that describes the appropriate use of opioid medications, with an emphasis on pain management within the scope of Optometry and general pain management
- Case anecdotes will emphasize the management of ocular pain using oral pain medications
- Opioid medications will be evaluated in terms of individual opioid agonist and antagonist medications, evaluation of individual patient factors, and a description on how to protect both patient and practitioner

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## Learning Objectives

- Describe the differences between nociceptive and neuropatic pain.
- List and describe how to interpret pain scales.
- Describe the commonly prescribed pain medication classes in terms of mechanisms, side effects, drug interactions, and applicability for pain management.
- Differentiate individual opioid sub-classes, including:
  - Codeine-based
  - Morphine-based
  - Novel agents
  - Combination therapy
  - Opioid antagonists
- When given a patient case, choose an appropriate pain treatment plan for the management of ocular pain, in terms of drug(s), dosing issues, duration of treatment, and a monitoring plan for efficacy and toxicity.
- Describe the treatment issues and options associated with the treatment of ocular pain in a patient who is opioid allergic.

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## NIH: National Institute on Drug Abuse
As of March 2018

- Every day, more than 115 people in the United States die after overdosing on opioids
- The misuse of and addiction to opioids
  - Prescription pain relievers, heroin, and synthetic opioids such as fentanyl
- Serious national crisis that affects public health as well as social and economic welfare
- The Centers for Disease Control and Prevention estimates that the total "economic burden" of prescription opioid misuse alone in the United States is $78.5 billion a year
  - Including the costs of healthcare, lost productivity, addiction treatment, and criminal justice involvement

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## What do we know about the opioid crisis?

NIH: National Institute on Drug Abuse (March 2018)

- Roughly 21 to 29 percent of patients prescribed opioids for chronic pain misuse them
- Between 8 and 12 percent develop an opioid use disorder
- An estimated 4 to 6 percent who misuse prescription opioids transition to heroin.
- About 80 percent of people who use heroin first misused prescription opioids
- Opioid overdoses increased 30 percent from July 2016 through September 2017 in 52 areas in 45 states
- The Midwestern region saw opioid overdoses increase 70 percent from July 2016 through September 2017
- Opioid overdoses in large cities increase by 54 percent in 16 states

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## What are HHS and NIH doing about it?

- In the summer of 2017, NIH met with pharmaceutical companies and academic research centers to discuss:
  - Safe, effective, non-addictive strategies to manage chronic pain
  - New, innovative medications and technologies to treat opioid use disorders
  - Improved overdose prevention and reversal interventions to save lives and support recovery

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## Pain

- Pain is very important to our survival
- Pain is defined as the perception of a noxious (harmful) stimulus
- Pain can also occur in the absence of injury or long after an injury has healed
- Pain provides humans with information about:
  - Tissue-damaging stimuli
  - Thus enables them to protect themselves from greater damage
- Pain is protective in two ways:
  - It removes a person from stimuli that cause tissue damage through withdrawal reflexes
  - Learning associated with pain causes the person to avoid stimuli that previously caused pain
- Pain often initiates the search for medical assistance and helps us to pinpoint the underlying cause of disease

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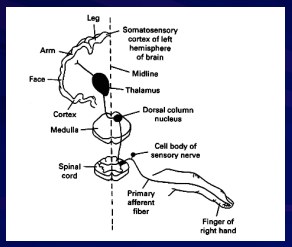
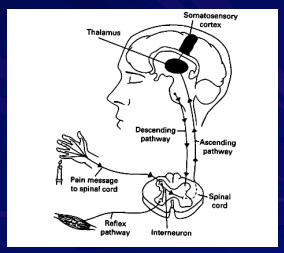
## Pain Pathways

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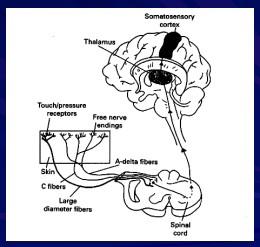
## Nociceptors and Neurons

- A nociceptor is a sensory receptor that responds to potentially damaging stimuli by sending nerve signals to the spinal cord and brain
- A delta fibers- small, myelinated fibers appear to carry sharp, pricking sensations
- C fibers- unmyelinated fibers appear to carry a diffuse, throbbing pain
  - Long- lasting throbbing pain is probably the result of prolonged activity in C fibers
- Large diameter fibers
- Hit your finger with a hammer and you will experience both types of pain

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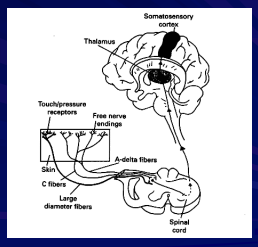
## Chemical Stimulation of Nociceptors

- Prostaglandins
- Bradykinin
- Potassium
- Seratonin
- Histamine

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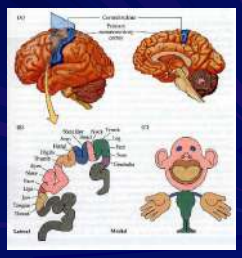
## Somatosensory System

- Diverse sensory system composed of the receptors and processing centers to produce the sensory modalities:
  - Touch
  - Temperature
  - Proprioception (body position)
  - Nociception (pain)
- The system reacts to diverse stimuli using different receptors
  - Thermoreceptors
  - Nociceptors
  - Mechanoreceptors
  - Chemoreceptors



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## Pain

- Pain is an unpleasant sensory experience associated with actual or potential damage to the body, or perception of such damage. It is a subjective experience
- Subjective experience
- Memories of events associated with extreme pain persist for a long time
- Mental state is known to have a powerful influence over pain
  - An athlete may not notice a twisted ankle until after the competition is over.
  - Soldiers in battle often continue to fight even after sustaining serious injury, and they may report afterwards that they experienced no pain until after battle
- The scientific explanation for this phenomenon is that the brain not only receives pain messages, but also has a descending system of neurons that suppresses pain messages

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## Pharmacology of Pain Management

- Peripheral acting agents
  - Prevent sensitization of receptors to substance P
  - Example: NSAIDs, ibuprofen
- Signal inhibiting agents
  - Prevent pain signal from travelling to cortex
  - Example: Anesthetics, proparacaine
- Central acting agents
  - Act on pain perception centers in the cortex (CNS)
  - Example: opioids/narcotics

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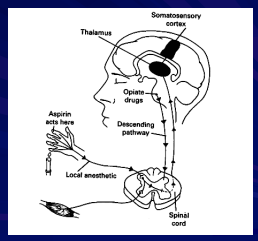
## Descending Pathway

- This system inhibits cells in the spinal cord that transmit pain signals
- A pathway for natural pain modulation
- Opioids that occur naturally such as the endorphins are important neurotransmitters in some of these descending pathways

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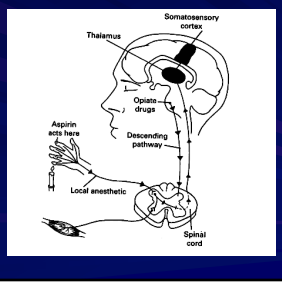
## Peripheral versus Central Acting

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## Two major types of pain:

**Nociceptive Pain** – This is what is the typical pain that occurs due to acute injuries and is the normal processing of the painful stimuli

* responsive to non-opioids and opioids

**Neuropathic**: abnormal processing of stimuli – sometimes this is much harder to treat

* treatment includes adjuvant analgesics

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## Neuropathic Pain
### Chronic Pain

- Choosing analgesics, the severity and response to other medication determines the choice of agent
- The WHO pain ladder
  - Originally developed in cancer-related pain, is widely applied to find suitable drugs in a stepwise manner
  - The analgesic choice is also determined by the type of pain
- Neuropathic pain
  - Traditional analgesics are less effective, and there is often benefit from classes of drugs that are not normally considered analgesics
  - Tricyclic antidepressants
  - Anticonvulsants

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## Neuropathic Pain
### Chronic Pain

- Trigeminal neuralgia
- Post-herpetic neuralgia
- Diabetic neuropathy
- Phantom limb pain following an amputation
- Multiple sclerosis
- Pain following chemotherapy
- HIV infection
- Alcoholism
- Tension headache
- Migraine
- Fibromyalgia
- Low back pain

- Tricyclic antidepressants for pain
  - The most effective type of antidepressant used for pain
  - Imipramine — Tofranil
  - Clomipramine — Anafranil
  - Nortriptyline — Pamelor
  - Desipramine — Norpramin
- Anticonvulsants for pain
  - Gabapentin — Neurontin
  - Topiramate — Topamax
  - Pregabalin — Lyrica
  - Carbamazepine — Tegretol
  - Oxcarbazepine — Trileptal

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## Post Herpetic Neuralgia (PHN)

- Patients with PHN report decreased quality of life and interference with activities of daily living
- Approximately 1 million cases of herpes zoster occur annually in the US
  - One in every three people develops herpes zoster during their lifetime
- PHN is a frequent complication occurring in 5% to 15% of cases
  - Causing moderate to severe neuropathic pain
- PHN is a neuropathic pain syndrome characterized by pain that persists for months to years after resolution of the herpes zoster rash
- Neuropathic pain
  - Does not respond consistently to classic non-opioid analgesic drugs
  - Better treated with antidepressant, anticonvulsant drugs and topical agents
- Neuropathic pain is a major public health problem worldwide
  - Unclear mechanism
  - Treatment is one of the most difficult medical problems

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## Post Herpetic Neuralgia (PHN)
### Treatment

- Approaches to management of post herpetic neuralgia include
  - Preventing herpes zoster through vaccination and/or antiviral treatment
  - Administering specific medications to treat pain
- First-line drugs
  - Anti-convulsant -neuropathic pain
    - Calcium channel α2-δ ligands
    - gabapentin (Neurontin) and pregabalin (Lyrica)
  - Tricyclic antidepressants
    - amitriptyline, nortriptyline, desipramine
  - Topical lidocaine patches
    - Works because PHN is a peripheral neuropathy
    - **Radicular pain** is a type of **pain** that radiates into the lower extremity directly along the course of a spinal nerve root (topical lidocaine not effective)

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## Lyrica - pregabalin
## Neurontin - gabapentin

- Does Duration of Neuropathic Pain Impact the Effectiveness of Pregabalin?
  - Patients with chronic pain conditions such as neuropathic pain frequently experience delays in diagnosis and treatment
  - Pregabalin significantly improves pain irrespective of the length of time since onset of neuropathic pain

Pain Pract. 2016 Sep 2. doi: 10.1111/papr.12469. **Does Duration of Neuropathic Pain Impact the Effectiveness of Pregabalin?** [redacted]

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## What is Your Goal?

- Anti-platelet
- Anti-pyretic
- Analgesic
- Anti-inflammatory

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## Analgesia vs Anti-inflammatory vs Anesthetics

- Analgesia
  - Painkiller, pain reliever
- Analgesic drugs act in various ways on the peripheral and central systems
  - Acetaminophen (USA)
    - Paracetamol (elsewhere)
  - Non-steroidal anti-inflammatory (NSAIDs)
    - Salicylates
  - Opioid drugs
    - Codeine
- They are distinct from anesthetics, which reversibly eliminate sensation
- Anti-inflammatory
  - Refers to the property of a substance or treatment that reduces inflammation
  - Anti-inflammatory drugs make up about half of analgesics
  - Remedying pain by reducing inflammation
  - As opposed to opioids
    - Which affect the central nervous system

Dosage for management of inflammation is higher than that for analgesia

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## "Ceiling Effect"

- Commonly used when discussing *analgesics*
- Phenomenon in which a drug reaches a maximum effect
  - Increasing the drug dosage does not increase its effectiveness
- Central Nervous System Agents
  - No ceiling effect
- Peripheral Nervous System Agents
  - Ceiling effect

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## Acute versus Chronic Pain

- Acute
  - Where we are most of the time as optometrists
  - Acetaminophen
  - NSAIDS
  - Opioid
- Chronic
  - Acetaminophen
  - **NSAIDS**
  - **Opioid**
  - **Tricyclic antidepressants**
  - **Gabapentin (Neurontin)**

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## Goals of Pain DO Differ…

The goal for managing **acute pain** is to keep the patient as comfortable as possible while minimizing the ***adverse drug reactions (ADRs)*** from the pain meds.

The goals for managing **chronic pain** are to keep the patient as comfortable as possible (this may not mean the patient is pain free), and integrating the patient back into a "normal life" and activities of daily living, while minimizing the ADRs from the pain meds.

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## Pain Assessments and Scales

- Adds objective data to a patient's feeling of pain
- This helps the patient and the practitioner quantify and even qualify the pain
- Helps guide therapy into 1 of 3 categories:
  - Mild
  - Moderate
  - Severe

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## Disney - Big Hero 6

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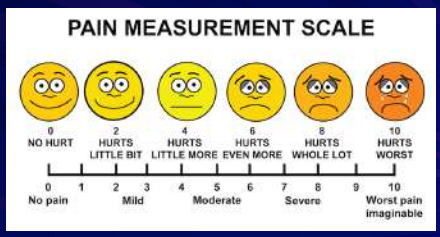
## Combination Pain Scale…

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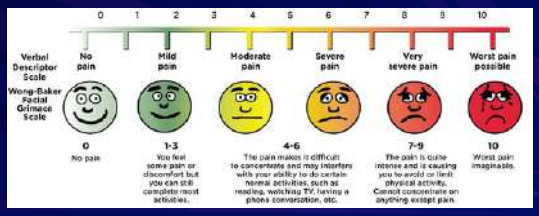
## Combination Pain Scale…

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## Narcotic Agents

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## Narcotic Agents

- Directly affect opioid receptor
  - Central acting
- Bind to opioid receptors in brainstem, cortical areas and spinal cord
- Mimic endorphins, producing a morphine like effect whether natural or synthetic

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## Narcotic Agents

- Effective for moderate and severe pain
- Patient response variable due to individual sensitivity of opioid receptors
- No addiction likely with short term use
- Adverse effects is usually the limiting factor in usage
  - On the next slide
- Safer for patients with NSAID contraindications
- Peak effect 1.5-2.0 hours after oral dose
  - Advise patient with acute and severe pain

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## Narcotic Agents

**Important Notifications for Patient**
- Drowsiness
- Dizziness
- Blurred vision
- Nausea,vomitting
- Constipation***
- Avoid ETOH
- Avoid of CNS agents

**Contraindications**
- Bronchial asthma
- COPD
- Emphysema
- Pregnancy
- Prior Addiction
- Renal/liver dysfunction
- Tricyclic antidepressants
  - No dosing within 14 days
- Phenothiazines
  - Various antipsychotic and antihistaminic drugs

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## Oral Pain Relievers

- PA allows schedules 3, 4 & 5 (narcotic/non-narcotic)
- Acetaminophen typically with opioid derivative
- Synergism (peripheral and central acting, 1+1=3)
- Avoid acetaminophen in alcoholics or people who have 3 or more drinks/day…causes liver failure…bleeding
- Avoid acetaminophen with coumadin…inc pro-time
- FYI-avoid ibuprofen/nsaids in Type 1 & 2 DM, causes reduced renal function, Type 2 reacts with oral hypoglycemic agents

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## Oral Pain Reliever Pearls

- OD's in all states are now allowed to prescribe or recommend OTC pain relievers
- Drug Enforcement Agency (DEA) numbers are required to prescribe controlled substances
- The real value of schedule III and schedule IV narcotic analgesics
  - They provide good pain relief
  - They provide a degree of sedation
  - Tend to minimally impact the digestive system and kidneys
    - It's not that they're dramatically more potent than OTC analgesics like aspirin, acetaminophen, ibuprofen or naproxen

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## 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"**

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## Controlled Substance Schedules

- Schedule III - Safer, less likely to be abused (as compared to Schedule II)
  - Combination products with APAP or ASA (codeine)
- Schedule IV – Safer, less likely to be abused (as compared to Schedule II and III)
  - Tramadol (Ultram)
- Schedule V – safest, least likely to be abused
  - Expectorants with codeine

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## Opioids "narcotics"

- They mimic the actions of endogenous opioid compounds:
  - enkephalins, dynorphins, endorphins
    - These help determine "pain tolerance"

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## Mechanisms of Action:

- Relieve pain and induce euphoria by binding to the opioid receptors (mu, kappa, delta) in the brain and spinal cord:
  - **Mu, kappa, delta** receptors in other places = ADRs
    - Mu: analgesia, ***euphoria***, miosis, sedation, constipation, respiratory depression, addiction
    - Kappa: analgesia, diuresis, sedation, miosis, ***dysphoria***, psychomimetic effects, respiratory depression, constipation
    - Delta: analgesia

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## Formulations…

- **Immediate release:**
  - AKA short-acting; breakthrough
  - Uses: acute pain; breakthrough pain
    - Ex: Percocet, Tylenol w/ codeine, tramadol, Vicodin, etc.
- **Controlled release:**
  - AKA long-acting; sustained release; extended release
  - Uses: basal control of chronic pain; typically NOT for acute pain nor in opioid naïve patients!
    - Ex: OxyContin, MS Contin, Duragesic patch, etc.

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## Morphine Products

**Morphine**
- Standard for comparison of other agents

- Used for severe pain

- Multiple BRAND/TRADE names for long-acting morphine products, with very diverse delivery and release systems

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## Hydromorphone Products

**Hydromorphone (Dilaudid)** tablets ("take 1 – 2 tablets every 4 to 6 hours as needed for pain")

- Used for severe pain

- very potent
  - Example: Compare to morphine
    - 30mg PO morphine = 8mg PO hydromorphone

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## Codeine tablets – C3

- WEAK analgesic: 30mg PO morphine = 200mg PO codeine

- Add acetaminophen/aspirin – Schedule III
  - Tylenol #2 = 300 mg acetaminophen & 15 mg codeine
  - **Tylenol #3** = 300 mg acetaminophen & 30 mg codeine
  - Tylenol #4 = 300 mg acetaminophen & 60 mg codeine
  - 1 – 2 tablets every 4 – 6 hours as needed for pain (not to exceed **3 grams** of APAP per day)

- Add expectorant – Schedule V

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## Oxycodone Products

- **Extended Release/Controlled Release:**
  - OxyContin

- **Immediate Release: short-acting tablets**
  - **OxyIR**
  - **Roxicodone** solution
  - with APAP:
  - ***Percocet*** and Endocet

- "Take 1 – 2 tablets by mouth every 4 to 6 hours as needed for pain"
  - Not to exceed 3 grams of APAP per day

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## Oxycodone Products

**Percodan** (oxy + asa) – no one uses this product

- Beware of combination with acetaminophen (Percocet), various strengths
- 30mg PO morphine = 20mg PO oxycodone

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## Hydrocodone Products

Immediate-Release Products:

**Hydrocodone + APAP (Norco, Vicodin, Lortab)**

**Hydrocodone 7.5 mg + IBU 200 mg (Vicoprofen)**

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## Hydrocodone Products

- "Take 1 – 2 tabs/caps every 4 – 6 hours as needed for pain (not to exceed 3 grams of APAP per day)
- ~~CIII~~ - for moderate/severe pain – works well
  - AS OF AUGUST 2014, hydrocodone products are ALL CII!!
- 30mg PO morphine = 20-30mg PO hydrocodone

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## Miscellaneous

- **Fentanyl Patch** (Duragesic)
- Fentanyl lozenge (Actiq)
  - MOST potent opioid
- **Meperidine** (Demerol)
  - ACTIVE metabolites = undesirable
- **Methadone**
  - Used for opioid abuse or chronic pain

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## Tramadol – a reasonable option

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

- tramadol (50 – 100 mg q 4 – 6 hours; do not exceed 400 mg/day)
  - Dual action: **mu** receptors & inhibits neuronal uptake of **serotonin** & **norepinephrine**
    - **Synergistic mechanism of action?**
  - ~~Not controlled~~
    - AS OF AUGUST 2014, NOW A C4 (Schedule IV)
    - "tramies" = abuse potential; helps decrease withdrawal symptoms

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## Opioid Allergies

- If a patient is truly allergic then there might be cross reactions between agents
  - That's why we must ask appropriate questions when a patient presents as "allergic" to an opioid
  - Always err on the side of caution if you are unsure…

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## Opioid Effects/ADRs:

- CONSTIPATION-anticipate it!
  - All patients should receive a stool softener + stimulant combo: docusate + senna/Senna+S
- Sedation and euphoria – tolerance develops to this

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- inhibition of cough reflex
- Respiratory depression
  - this is what kills a patient
  - **IMPORTANT to make sure that the patient doesn't increase dose on their own or add another CNS depressant with it!**

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## 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

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## Analgesic Medications in Pregnancy

- Acetaminophen (Tylenol)
  - Analgesic of choice in pregnancy
- NSAIDs should generally be avoided in pregnancy
  - Despite Category B
  - Miscarriage risk in first trimester
    - Ibuprofen
  - Second trimester use is likely safe
    - Ibuprofen
  - Third trimester avoid ALL NSAIDs
    - Premature Ductus Arteriosus closure in third trimester
- Opioids should be avoided in pregnancy unless there is no viable alternative
  - First trimester use is associated with heart defects and spina bifida

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## Alternatives/Additions to Opioids

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## Conditions Which May Require Pain Management

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

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## Bandage Contact CL 92071

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## Medrol Dose Pack (Methylprednisolone)

Convenient for patient
- 6 day "automatic taper"

Sometimes it is not HIGH enough of a dose or LONG enough of a treatment duration

4mg methylprednisolone = 5mg prednisone

MDP equivalent (to prednisone):
- Day 1: 30mg
- Day 2: 25mg
- Day 3: 20mg
- Day 4: 15mg
- Day 5: 10mg
- Day 6: 5mg

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## MILLIPRED DOSE PACK (PREDNISOLONE)

5mg prednisone/prednisolone = 4mg methylprednisolone

An alternative to a Medrol dose pack
COST/AWP: **Medrol** = $30
**Millipred** = $ 400
Just give "free" **prednisone** tabs!


**Clinical Pearl**: The mineralocorticoid (salt and H2O retaining properties of methylprednisone versus prednisone/prednisolone is NOT IDENTICAL!

Methylprednisolone is LEAST LIKELY to cause salt and H2O retention = LESS LIKELY to exacerbate blood pressure

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## ADVERSE REACTIONS: STEROIDS

- Loss of glycemic control
  - Watch in patients with diabetes!
- Drug-Drug interaction with warfarin (Coumadin)
  - Typically ↑ INR
- GI upset: take with food!
- Fat redistribution, osteoporosis, cataracts, muscle wasting = long-term effects

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## ACETAMINOPHEN (TYLENOL)

- Mechanism: largely unknown
- Mild to moderate pain
- No anti-inflammatory potential
- Available in 325mg, 500mg, and 650mg tablets/capsules
- Dosing: 1,000mg every 6 to 8 hours OR 650mg every 6 hours
  - Max daily dose: DO NOT EXCEED 3,000 to 4,000mg in 24 hours
  - OK to use ALONG with or ALTERNATING with ibuprofen or naproxen
- ADRs: avoid in patients who consume > 3 alcoholic beverages per day

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## NSAIDs – Ibuprofen (Advil/Motrin)

- Mechanism: prostaglandin inhibitors = decrease in inflammatory mediators
- Good for pain and inflammation
- Mild to moderate pain
- Available in 200mg (OTC) and 400mg, 600mg, and 800mg tablets (RX only)
- Dosing: 200mg to 800mg every 6 to 8 hours
  - Max daily dose: do not exceed 3,200mg in 24-hour period
  - MUST reach 1,200mg daily to achieve anti-inflammatory potential

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## NSAIDs – NAPROXEN SODIUM (ALEVE)

- Mechanism: prostaglandin inhibitors = decrease in inflammatory mediators
- Good for pain and inflammation
- Mild to moderate pain

- Available in 220mg, 275mg, 375mg, and 550mg tablets
- Dosing: 220 to 440mg every 8 to 12 hours OR 660mg every 24 hours OR 550mg every 12 hours
  - Acute pain: more often is BETTER
  - Maximum daily dose is 1,000 to 1,100mg in 24 hours period
    - OK to dose 1,375mg to 1,500mg on DAY 1 ONLY!
  - Anti-inflammatory potential: dose at HIGHER END of range

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## NSAIDs – Adverse Effects

- Take with food – tough on the stomach
- May cause vasoconstriction in the kidneys
- Inhibits platelet aggregation, so ibuprofen interacts with warfarin (Coumadin) = ↑ INR
- May increase risk of heart attack and stroke in patients at "high risk" and with "regular use"
- May increase blood pressure and IOP

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## SYNERGY…

It is acceptable to use an ALTERNATING dosing regimen OR an ADDITIVE dosing schedule

Good in moderate to severe pain

| Acetaminophen + Ibuprofen |
|---|
| Ibuprofen:<br>OTC: 200mg.<br>Rx: 400mg, 600mg, 800mg.<br>Acetaminophen:<br>OTC: 325mg, 500mg, 650mg. |
| Two 200mg ibuprofen every four hours while awake.*<br>Two 325mg acetaminophen every four hours while awake. |
| Maximum Daily Doses:<br>Ibuprofen: 3,200mg.<br>Acetaminophen: 4,000mg. |
| Take with food. Avoid in patients who drink three or more alcoholic beverages per day. See previous section regarding precautions with NSAIDs. Alternate ibuprofen and acetaminophen every two hours (e.g., ibuprofen at 8am, acetaminophen at 10am, ibuprofen at 12pm, acetaminophen at 2pm, etc...). |

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## Pain Reliever Help

Know your maximum daily allowances:

- APAP 3000 mg (4000 mg*)
- ASA 6000 mg
- Ibuprofen 3200 mg
- Naproxen Sodium 1650 mg (Aleve/Anaprox)
- Naproxen 1500 mg (Naprosyn)
- Codeine 240 mg
- Hydrocodone 60 mg
- Tramadol 300-400mg

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Questions?
Thank you!

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