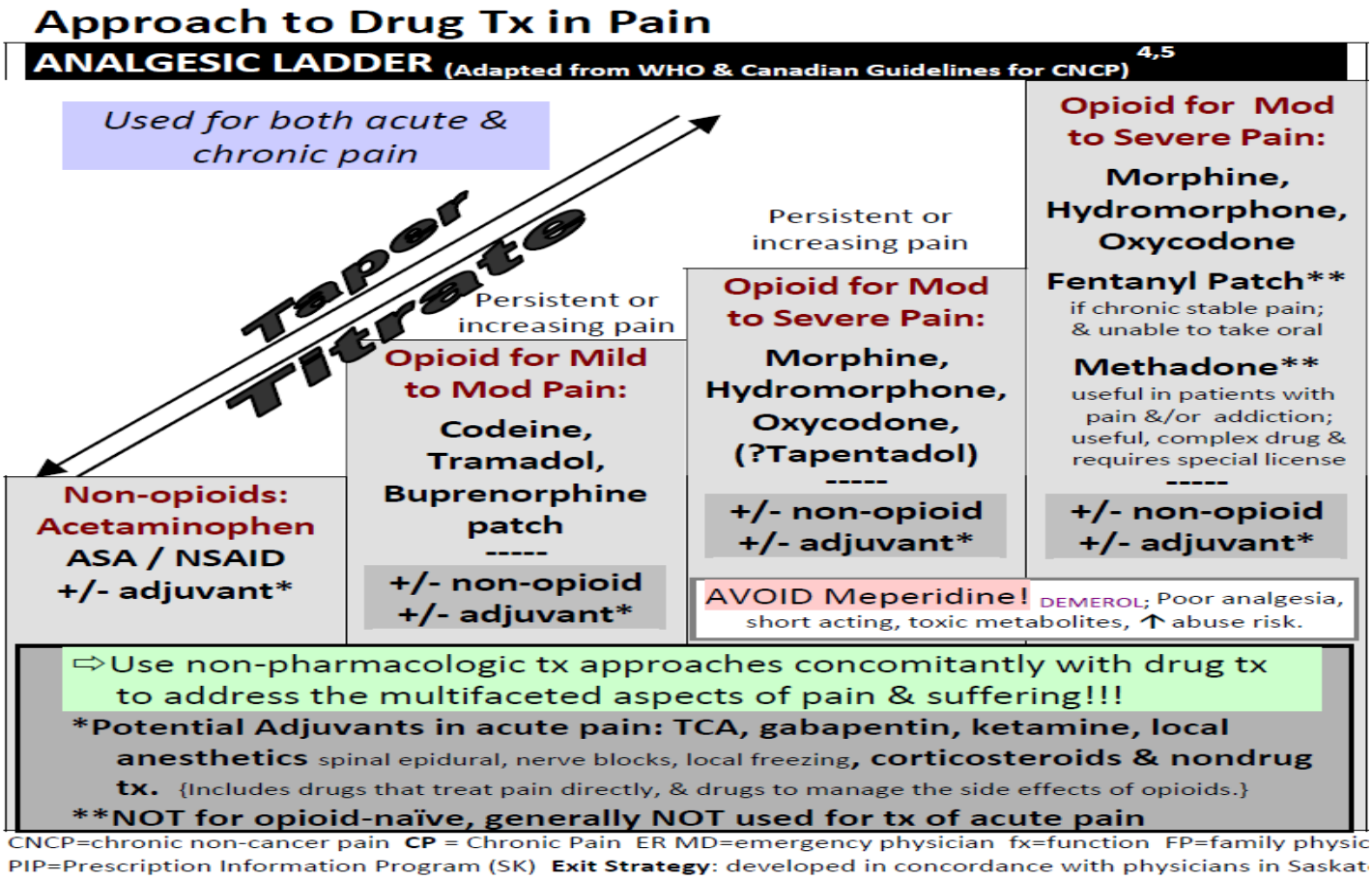
# Advances in Dental Pain Management



## I. AMBULATORY DENTAL PAIN CONTROL STRATEGY

| Pain Control Strategy | | |
|---|---|---|
| | NSAIDs Indicated (Patients who Can take ASA-like Drugs) | NSAIDs CONTRA Indicated (Patients who Can't take ASA-like Drugs) |
| Mild Pain | Ibu 200 mg-400mg scheduled four times a day | APAP 650 – 1000 mg up to 4000mg per day |
| Moderate Pain | NSAID – Up to maximum Effective Dose | APAP 650 – 1000 mg With equivalent of Hydrocodone 5-10mg scheduled four times a day |
| | NSAID Plus APAP Or NSAID Plus APAP/HC. | |
| Severe Pain | NSAID – Max Dose and APAP/Oxycodone 10 mg Combination | Acetaminophen 1000 mg with equivalent of Oxycodone 10 mg scheduled four times a day |

## II. WHO ANALGESIC LADDER RELATES TO CANCER PAIN



## Dose-Response for Three Types of Oral Analgesics

- Opioids provide unlimited pain relief but side effects and abuse potential limit their use in ambulatory patients
- Ibuprofen and equi-analgesic oral doses of other NSAIDs provide a ceiling analgesic effect. Increasing beyond ibuprofen 400mg DOES increase anti-inflammatory effect which is an essential component of acute dental pain.
- ASA/APAP provide a lower ceiling analgesic effect which reaches maximum analgesic at 1000mg.
- APAP combined with NSAIDs shows a synergistic effect on acute dental pain and these two agents should be dosed concomitantly to maximize non-opoid pain control for acute dental pain.

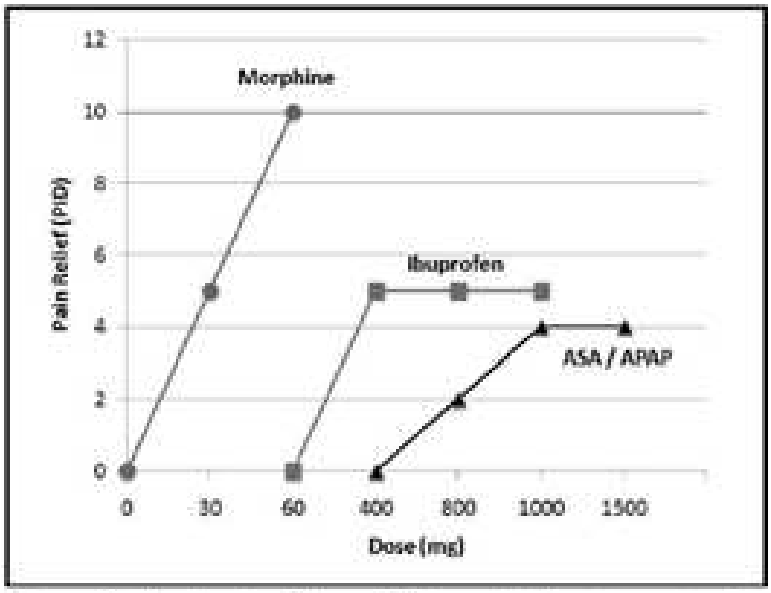



**Figure 2.** Analgesic efficacy. This graph illustrates a typical dose-response curve for orally administered (PO) analgesics. The dose-response curve for opioids such as morphine demonstrates unlimited efficacy in which greater doses provide greater analgesia. At equipotent doses, all opioids demonstrate a similar dose response. In contrast, nonopioids demonstrate a "ceiling" effect that generally is adequate for relief of mild to moderate pain (pain relief rating of 4–5 in this scale). For ibuprofen, doses greater than 400 mg do not provide further analgesia. For aspirin (ASA) and acetaminophen (APAP), this ceiling effect is achieved at 1000 mg and is somewhat lower than that provided by nonsteroidal anti-inflammatory drugs (NSAIDs).

# III. ACETAMINOPHEN (APAP, Tylenol, g)

**Maximum daily dosage:**

- *ACUTE THERAPY*: Maximum of 4 g/day monitored and 3g/day unmonitored
- *CHRONIC THERAPY +/or ELDERLY PATIENT*: Maximum of 2.6 grams APAP/day

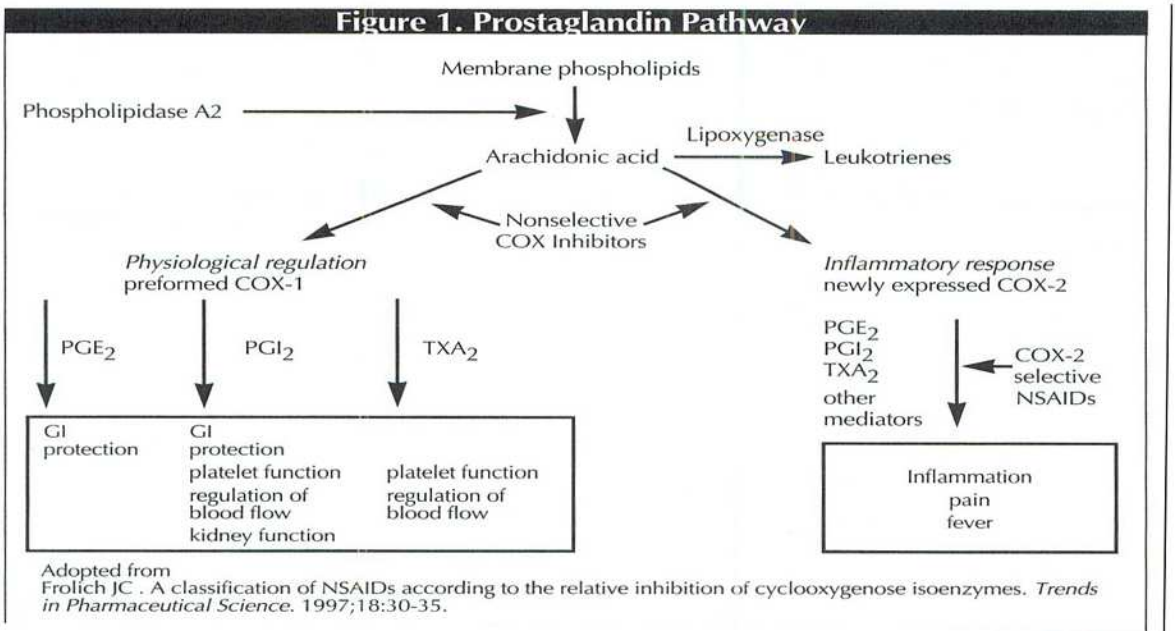
| ***PRODUCT*** | ***DOSAGE*** | ***ACUTE*** | ***CHRONIC*** |
|---|---|---|---|
| Regular Strength APAP | 325mg | 12/day | 8/day |
| Extra Strength APAP | 500mg | 8/day | 5/day |
| Extended Relief APAP | 650mg | 6/day | 4/day |

**Toxicity risk is increased by:**

- *Fasting during acetaminophen therapy*
- *3 or more alcoholic drinks per day*

**TOXICITY: ORAL: Ingestions of 200 mg/kg or 10 g, whichever is less, are considered potentially toxic. IV: A 10 fold overdose caused hepatotoxicity in a chronically malnourished child. THERAPEUTIC DOSE: ADULT: Oral: 650 to 1000 mg every 4 hours up to 4 g/day. IV: (50 kg or greater): 650 to 1000 mg every 4 to 6 hours, up to 4 g/day; (less than 50 kg): 12.5 mg/kg to 15 mg/kg every 4 to 6 hours, up to 3750 mg/day (75 mg/kg/day). PEDIATRIC: Oral: 10 to 15 mg/kg every 4 hours up to 60 mg/kg/day. IV: 12.5 mg/kg to 15 mg/kg every 4 to 6 hours, up to 75 mg/kg/day.**

# IV. NONSTEROIDAL ANTI-INFLAMMATORY DRUGS (Non-acetylated)




## A. NSAIDS COMMONLY USED FOR ACUTE PAIN AND INFLAMMATION

| *NSAID* | *ROLE in Therapy ** | *Tp (hr)* | *t 1/2 (hr)* | *ANALGESIC Onset (hr)* | *Duration (hr)* | *USUAL ADULT DOSE (mg)* | *MAX. DAILY DOSE (mg)* |
|---|---|---|---|---|---|---|---|
| ***PROPRIONIC ACIDS*** | | | | | | | |
| ***flurbiprofen (Ansaid G)*** | P | 1.5 | 5.7 | 2 | 6-7 | 50-100 q4-6h | 300 |
| ***ibuprofen (Motrin,G,otc)*** | P | 1-2 | 1.8-2. | .5 | 4-6 | 400-600 q4-6h | 3200/1200 |
| ***ketoprofen (Orudis,OTC,G)*** | P,I | .5-2 | 2-4 | 1 | 6-7 | 50 q6-8h | 300/75 |
| ***naproxen(Naprosyn,G)*** | P,I | 2-4 | 12-15 | 1 | up to 7 | 500 stat, then 250 q6-8h | 1500 |
| ***naproxen Na (Anaprox,DS,G)*** | P,I | 1-2 | 12-13 | 1 | up to 7 | 550 stat, then 275 q6-8h | 1650 |
| ***naproxen Na (Aleve – OTC,G)*** | P,I | 1-2 | 12-13 | 1 | up to 7 | 440 stat, then 220 q 8-12h | 660 |
| ***ACETIC ACIDS*** | | | | | | | |
| ***diclofenac K(Cataflam)*** | P,I | 1-2 | 1-2 | .5 | 4-6 | 100 stat, then 50 q6-8h | 200 |
| ***diclofenac Na (Voltaren,G)*** | P,I | 2-3 | 1-2 | 1 | 4-6 | 50 q6h | 200 |
| ***etodolac (Lodine,G)*** | P | 1-2 | 7.3 | .5 | 4-12 | 200-400 q6-8h | 1200 |
| ***ketorolac (Toradol oral,G)*** | P | .5-1 | 3.8-6 | .5 | 6-8 | 20 stat, then 10 q4-6h | 40 |
| ***nabumetone (Relafen,G)*** | P,I | 2-4 | 24 | 4<br>2 | up to 12 | 750-1000mg q 12h | 2000 |
| ***SALICYLATE*** | | | | | | | |
| ***diflunisal (Dolobid,G)*** | P,I | 2-3 | 8-12 | 1 | 8 | 1000 stat, then 500 q8h | 1500 |
| ***COX-2 SELECTIVE*** | | | | | | | |
| ***Celecoxib (Celebrex)*** | I | 3 | 11 | 2 | up to 24h | 100-200mg 1d-bid | 400 |

***P=pain relief, I=inflammation reduction**

## B. CLINICAL APPLICATIONS:

### *1. NSAIDS VS OPIOIDS*

| *ADVANTAGES OF PRESCRIBING NSAIDS* | *DISADVANTAGES OF NSAIDS* |
|---|---|
| no sedation, constipation or respiratory depression | GI irritation is common |
| reduced swelling and trismus | no adult liquid preps are available |
| no central nausea and vomiting side effects | patient expectations are not fufilled |
| no potential for abuse or habituation | no activity limitations or sedation |
| | possible increased risk of blood clots |

### *2. GENERAL PRESCRIBING GUIDELINES*

a) NSAIDS can be mixed with narcotics +/or acetaminophen for additional effects, not synergistic
b) *AVOID* NSAID + NSAID combinations:
- take medication history, including OTC agents
- no therapeutic advantage, deleterious effects on GI tract, platelets

c) NSAID failure - try switching chemical classes
-acetic acid derivatives are structurally different so switching may improve response

### *3. PATIENT-SPECIFIC FACTORS*

| | |
|---|---|
| *AERD (Samter's Triad)* | Asthma, chronic urticaria, nasal polyps = sensitivity triad. |
| *ASTHMA* | Avoid NSAIDS if one triggers asthma, avoid COX-2s |
| *ELDERLY* | Choose NSAID with short t ½ to avoid accumulation |
| *GASTRITIS, ALCOHOLISM* | Use cytoprotective agent prophylaxis, COX-2s are better |
| *LIVER DISEASE* | Avoid diclofenac and piroxicam (Feldene) |
| *HIATAL HERNIA* | AVOID ASPIRIN, caution with any NSAID, COX-2s are better |
| *PEPTIC ULCER HX* | Caution with any agent, may need prophylaxis, COX-2s are better |
| *POST-OP PAIN* | Ketorolac very effective if substance abuse history |
| *RENAL DISEASE* | Caution, diflunisal may be best NSAID, COX-2s NO BETTER |
| *MAJOR SURGERY* | D/C ASA 1 week prior, D/C other NSAIDS 24 hours prior,Celebrex DOESN'T increase bleeding risk and don't have to be D/C'd. |
| CLOPIDOGREL THERAPY | CONSIDER AVOIDING NSAID THERAPY INCLUDING CELECOXIB |
| *ANTICOAGULANT THERAPY* | AVOID NSAID THERAPY. COX-2's increase bleeding due to a drug intx. |

## C. INDIVIDUAL AGENTS

### *1. IBUPROFEN (Motrin, g)*

- Many dosage forms: 100mg caplet, 50 & 100mg chewable tablets, 100mg/5ml susp, gel caps
- still the best first line agent due to good safety profile and reliable efficacy in acute pain (Oxford League)
- 800mg q 6 hours can be given initially, no anti-inflammatory value in doses above 3200mg/day

### *2. NAPROXEN SODIUM (Anaprox, Anaprox DS, G)*

-May give lowest risk of blood clots so safest for atherosclerosis or peripheral artery disease
-Longer half-life than ibuprofen so may accumulate in elderly but works for about 8 hours

### *3. KETOROLAC (Toradol, g, Sprix Nasal Spray)*

*MANUFACTURER PRESCRIBING GUIDELINES LIMIT USE OF ORAL TABLETS*

- Prescribing guidelines limit tablet use in response to serious adverse events
- Manufacturer bears less responsibility for adverse outcomes if practitioner uses medication outside of labeling
- Emphasizes the importance of proper patient selection criteria for all NSAIDS

# V. TRAMADOL (Ultram, G, Ultracet - Ortho/McNeil, RYBIX ODT - Victory)

A. *MECHANISM OF ACTION:*
- unique complimentary dual mechanisms
- tramadol is a weak opioid receptor binder as well as an inhibitor of serotonin and norepinephrine reuptake
- no inhibition of prostaglandin synthesis
- **controlled substance Schedule IV as of 8/18/14/ FDA pregnancy category C**

B. *THERAPEUTIC USE: 100MG =ASA/codeine 650/60 for acute pain.*
COMBINATION: Ultracet = 37.5mg tramadol/325mg acetaminophen, Ultram ER

C. *ADVERSE REACTIONS:*

| | | |
|---|---|---|
| Dizziness | 26% | Nausea 24% |
| Constipation | 24% | Headache 18% |
| Sedation | 16% | |

D. *DRUG INTERACTIONS*

carbamazepine $\rightarrow\rightarrow$ reduced tramadol effectiveness
MAOI $\rightarrow\rightarrow$ possible sympathomimetic potentiation (AVOID TRAMADOL)
CYP206 inhibitor $\rightarrow\rightarrow$ increased tramadol levels – caution with Prozac, Paxil, Zoloft SSRIs
CNS depressants $\rightarrow\rightarrow$ increased tramadol sedation

E. *DOSAGE & ADMINISTRATION*
- 50-100mg q 4-6 hours prn pain to maximum of 400mg/day ( max dose for pts > 75 years is 300mg/day)
- 100mg initially is more effective for severe pain
- Tramadol 50mg ODT (Rybix) gives faster onset and comes in a 50mg tablet with no generic

F. *PATIENT SELECTION CRITERIA*
- Patients on NSAIDs, Warfarin, Pradaxa. Eliquis, Xarelto or oral hypoglycemics
- Patients with history of histamine release with opiates or on hemodialysis
- Diagnosis of neuropathic pain or history of gastrointestinal ulceration
- Patients with an opiate dependence hx. Should **not** take tramadol – Controlled Substance Schedule IV
- Patients with severe allergic rx to CODEINE OR OTHER OPIATES should NOT take tramadol

# VI. Corticosteroids for Dental Pain and Inflammation Management

| Glucocorticoid | Approximate equivalent dose (mg) | Relative anti-inflammatory (glucocorticoid) potency | Relative mineralocorticoid potency | Half-life | |
|---|---|---|---|---|---|
| | | | | Plasma (min) | Biologic (hrs) |
| *Short-acting* | | | | | |
| Cortisone | 25 | 0.8 | 2 | 30 | 8-12 |
| Hydrocortisone | 20 | 1 | 2 | 80-118 | 8-12 |
| *Intermediate-acting* | | | | | |
| Prednisone | 5 | 4 | 1 | 60 | 18-36 |
| Prednisolone | 5 | 4 | 1 | 115-212 | 18-36 |
| Triamcinolone | 4 | 5 | 0 | 200+ | 18-36 |
| Methylprednisolone | 4 | 5 | 0 | 78-188 | 18-36 |
| *Long-acting* | | | | | |
| Dexamethasone | 0.75 | 20-30 | 0 | 110-210 | 36-54 |
| Betamethasone | 0.6-0.75 | 20-30 | 0 | 300+ | 36-54 |

- 25 high quality studies in post extraction patients show effectiveness for pain, trismus and swelling thereby reducing need or demand for opiates
- 15 high quality studies in patients post RCT show effectiveness in reducing pain, swelling and inflammation thereby reducing need for opiates
- Opioid-sparing analgesia is what we are striving for in dentistry
- Contra-indications:
  - Uncontrolled diabetics
  - Severe psychiatric conditions
  - Angle-closure glaucoma
  - Pediatric or pregnant patients

# VII. OPIOID ANALGESICS

## A. OPIOIDS COMMONLY USED ORALLY FOR MILD TO MODERATE PAIN

| OPIOID AVAILABLE | EQUIANANALG. DOSE (MG) | PEAK (HR) | DURATION (HR) | COMMENTS | PRECAUTIONS |
|---|---|---|---|---|---|
| **Codeine** (avoid in pts. On $2D_6$ inhibitors* - Prozac, Paxil, Cymbalta) | 40-60 | 1.5-2 | 4-6 | 10% transformed to morphine, not useful after 60mg q 3 hr | Impaired ventilation, asthma, high intracranial pressure |
| **Hydrocodone (Vicodin-ES,HP, Lortab,Zydone,G)** | 5 | 2 | 4-6 | not useful after 10mg q 3 hr | Most addictive Schedule 3 Health care providers are at risk of abuse |
| **Meperidine (Demerol,G)** | 50 | 1-1.5 | 4-5 | Biotransformed to normeperidine, a toxic metabolite, max dose 200mg/24 hours orally | Normeperidine can accumulate with repeated dosing – causing seizures, avoid in pts. on MAOIs |
| **Oxycodone (Percodan, Percocet,G)** | 2.5 | 1 | 3-4 | not useful after 10mg q 3 hr | always a C II substance as it causes euphoria |

***Amiodarone, Cimetidine, Desipramine, Duloxetine,Fluoxetine, Paroxetine, Propafenone, Quinidine, Ritonavir**

## B. CLINICAL USE OF NARCOTIC ANALGESICS

**1. POTENCY ESCALATION** — **PATIENT CAUTIONS/INSTRUCTIONS**

STEP 1. Maximize non opioids — STEP 1. Combine NSAID&APAP for **SYNERGISM**

STEP 2. Add Opioids for sleep&anxiety — STEP 2. Add opioids for additional pain relief or rest

STEP 3. Increase Opioid potency if needed — STEP 3. Increase potency only if uncomfortable at rest
- if vestibular or GI problems, try 1/2 dose with 1/2 dosing interval

to provide **ADDITIVE** pain relief & for sleep/anxiety
- consider APAP content of RX when prescribing

**Rx:** Hydrocodone 5mg w/APAP 325mg (Lorcet,G)
*Disp:* #15 (10mg of Hy = 80mg of Codeine)
*Sig:* 1-2 tabs q 4-6 hrs prn pain. Take with food/milk

**-hydrocodone/APAP is Schedule II as of 10/6/14**

**Rx:** Oxycodone 5mg w/APAP 325mg (Percocet, G)
*Disp*: #15 (10mg of Oxy = 120-160mg of Codeine)
*Sig*: 1-2 tab2 q 4-6 hrs prn pain. Take with food/milk

**-oxycodone/APAP has always been Schedule II**

**NOTE: Percocet now comes in FOUR combinations (2.5/325, 5/325, 7.5/325, 10/325)**

## C. FIXED OPIOID COMBINATIONS WITH IBUPROFEN – useful for APAP allergic patients

1. **OXYCODONE 5MG/IBUPROFEN 400MG (COMBUNOX)**
2. **HYDROCODONE 2,5, 5.0,7.5mg or 10mg/IBUPROFEN 200mg (VICOPROFEN,g)**

## D. ALLERGY VS PSEUDO-ALLERGY

True allergies involve an immune response while other reactions can fall into either side effects or pseudoallergy, which is generally the result of histamine release but no actual immune response. Below are some groups of symptoms followed with points to take into consideration when a patient exhibits one or more of the symptoms.
If the following symptoms occur with respect to opioid administration, they are likely related to a pseudoallergy rather than a true IgE mediated drug allergy:

- ✓ Generalized flushing, itching, sweating
- ✓ Mild hypotension accompanied by nausea and/or vomiting
- ✓ Itching, flushing, or hives at injection/application site

**Pseudoallergy reactions can be managed and/or minimized using the following strategies**:

- Try nonopioid analgesic if mild pain (acetaminophen & NSAID given at the same time)
- Avoid codeine, morphine & meperidine as these are most likely to trigger pseudoallergy.
- Use a more potent opioid (drugs listed below from least to most potent):
- Meperidine < codeine < morphine < hydrocodone < oxycodone < hydromorphone < fentanyl
- If effective against pain and symptoms are mild, consider administering opioid with an antihistamine such as diphenhydramine 25mg preferably in liquid form 30min prior to opioid dose.
- Consider reduction in opioid dose with more frequent administration if tolerated.

### Stepped Approach for Managing Postprocedural Ambulatory Dental Pain

- Schedule regular NSAID doses and start prior to no LA effect
- Add APAP to NSAID maximizing both doses on a schedule
- If above is inadequate, add an opioid in combination with APAP but caution on maximum APAP dosing NOT TO EXCEED 4g/24h
- DO NOT prescribe an opioid analgesic for patients already on chronic opiates.
- DO NOT prescribe an opioid analgesic for patients currently treated for opioid addiction or with an addiction history.
- Chronic opiate patients are best managed in conjunction with the physcian who prescribed the opiate on a regular basis.

**Table 4.** Stepped Approach for Managing Postoperative Pain*†‡

| | *Suggested Regimens* |
|---|---|
| Step 1 | Ibuprofen 400–800 mg tid/qid or equivalent NSAID<br>*and/or*<br>Acetaminophen (APAP) 500–1000 mg qid |
| Step 2 | Add any of the following to Step 1 regimen:<br>Oxycodone 5–10 mg or Morphine 15 mg 1 or 2 tabs q4h PRN<br>*or*<br>Pentazocine/NX 50 mg or Tramadol 50 mg 1 tab q4h PRN<br>*or*<br>Use combinations, provided no APAP included in Step 1<br>HC/APAP 5–10/500 1 or 2 tabs q4h PRN<br>*or*<br>OC/APAP 5–10/500 1 or 2 tabs q4h PRN<br>*or*<br>Pentazocine/APAP 1 or 2 tabs q4h PRN<br>*or*<br>Tramadol/APAP 1 or 2 tabs q4h PRN |

* Step 1 regimens generally are adequate for mild and most cases of moderate postoperative dental pain. They should be prescribed continuously, "around-the-clock"—not PRN. Effective patient education is absolutely essential if this is to be accomplished. "They must take the medicine even when they are NOT having pain." When this regimen proves inadequate, or when pain is anticipated to be more severe, Step 2 regimens can be added but should not replace those in Step 1.
† APAP indicates acetaminophen; HC, hydrocodone; and OC, oxycodone.
‡ Adapted from Becker and Phero.[48]

# PEDIATRIC ANALGESIC DOSAGES FOR DENTAL PAIN

| | ONSET (min) | PEAK (hrs) | DURATION (hrs) | PEDIATRIC DOSE (mg/day) | AVAILABLE PEDIATRIC PREPARATIONS |
|---|---|---|---|---|---|
| **Non-Narcotics** | | | | | |
| Acetaminophen (Tylenol, Tempra, Panadol, g.) | 20-30 | 0.5-2 | 3-7 | 10mg/kg q 4-6 hrs (max 65mg/kg/day) | Oral Solution: 48-325mg/5ml<br>Chewable tabs: 80 + 160mg<br>Rectal supp: 120,125,325,650mg |
| Diclofenac (Voltaren -$Na^+$salt) | 120 | 3 | 4-6 | 2-4mg/kg/day | Diclofenac EC tab 25, 50, 75mg |
| (Cataflam- $K^+$salt) | 30 | 1 | 4-6 | (max 200mg/day) | Cataflam tab 50mg |
| Diflunisal (Dolobid, g) | 60 | 2-3 | 4-7 | 10mg/kg q 8 hrs (max 1500mg/day) | Tablets:250, 500mg |
| Ibuprofen (Advil, Children's Motrin, Medipren, Nuprin, g) | 20-30 | 1-2 | 4-6 | 5-10mg/kg q4-6 hrs (max 40mg/kg/day) | Oral Susp: 100mg/5ml<br>Chew tabs: 50, 100mg<br>Caplet:100 ,200mg<br>Tablets: 200,400,600,800mg |
| Ketoprofen (Orudis, Oruvail, g) OTC-Actron, Orudis KT | 30 | 1-2 | 4-6 | 0.5-1mg/kg q6-8 hrs (max 300mg/day) | Capsules: 25,50,75mg<br>Ext.Release (Oruvail) 200mg |
| Naproxen (Naprosyn, g) | 60 | 1-2 | 4-7 | 10mg/kg/day (max 1500mg/day) | Oral Susp: 125mg/5ml<br>Tablets: 250,375,500mg |
| Naproxen Na (Anaprox, DS, g) | 60 | 1-2 | 4-7 | 11mg/kg/day (max 1650mg/day) | Tablets: 220,275, 500mg<br>Caplets: 220mg |
| **Narcotics** | | | | | |
| Codeine (sulfate or phosphate) (**ultra-fast metabolizers can Suffer toxic effects)-BLACK BOX WARNING in children post tonsillectomy and/or adenoidectomy. DON'T USE.** | 15-30 | 0.5-1 | 3-6 | 0.5mg/kg q4 hr (max120mg/day) | Codeine $PO_4$/promethazine oral syrup: 10mg +6.25mg/5ml<br>Codeine/APAP elixir: 12mg/120mg per 5ml<br>susp: 12mg/120mg/5ml |
| Hydocodone (Hydrocet, Lorcet, Vicodin, Zydone, g) **FDA issued Drug Safety Communication 1/11/18 stating that no one under age 18 years should receive codeine, hydrocodone or tramadol for cough/cold. DON'T USE.** | 15-30 | 0.5-1 | 4-8 | 0.1-0.2mg/kg q4-6h (max= 90mg/day) | Lortab Elixir: 2.5 HC + 167 APAP/5ml<br>Tabs: 5/325 ( Lorcet,g)<br>2.5/325 (Lortab)<br>7.5/325 (Lortab 7.5) |
| Meperidine (Demerol, g) **(Safe choice for patient allergic to morphine/codeine group)** | 15-45 | 1 | 4-5 | 1-3mg/kg q 3-4h (max 20mg/kg/day) | Tabs: 50,100mg<br>Oral Soln: 50mg/5ml<br>Mepergan Fortis: 50mg MPD/ 25mg promethazine |

# What to do when… (NSAID & APAP Version) for Short Durations-Katelyn Corcoran P-4 Updated 4/9/19

| Disease State | NSAIDs | Acetaminophen |
|---|---|---|
| Anticoagulant Use / Hemorrhagic Disorder / SSRIs<br>Common anticoagulants:<br>▪ warfarin (Coumadin, Jantoven)<br>▪ apixaban (Eliquis)<br>▪ dabigatran (Pradaxa)<br>▪ rivaroxaban (Xarelto)<br>Common antiplatelet agents:<br>▪ aspirin (>81 mg/day)<br>▪ clopidogrel (Plavix)<br>▪ prasugrel (Effient)<br>▪ ticagrelor (Brilinta) | ▪ Use only if needed<br>▪ Avoid Pre-operative NSAID<br>▪ If a post-operative NSAID is necessary, prescribe a PPI concomitantly to minimize GI irritation<br>▪ Use lowest dose for shortest day supply necessary<br>▪ From most to least likely to interfere in bleeding/clotting<br>o -Ibuprofen<br>o -Naproxen and Celecoxib<br>o -Diclofenac<br>Consider a selective cyclooxygenase-2 inhibitor | First Line<br>▪ Unscheduled timing for best pain management<br>▪ Long-term concurrent use of APAP (i.e., 2 to 4 g daily for 4 weeks) and warfarin sodium increases the International Normalized Ratio and the risk of bleeding. |
| Aspirin-sensitive Asthma | AVOID | First Line |
| Hepatitis C | AVOID – Can speed up cirrhosis of the liver | |
| Hypertension/heart failure w/ diuretics, ACE inhibitors, and beta blockers | Use w/ caution/avoid (relative) for shortest durations (5 days or less) | |
| Gastric Bypass<br>▪ First 2 mo. Post Op = Use liquid<br>▪ Available liq. Meds<br>o APAP<br>o APAP w/ Codeine<br>o Hydrocodone w/ APAP<br>o Ibuprofen<br>▪ 3+ mo. Post Op = use tablets smaller than m&m or liq. | ▪ Use only If needed<br>▪ If needed, use concomitant admin of PPI | First Line<br>▪ Use scheduled timing for best pain management |
| Gastritis, GI Bleeding, Ulcer, Hiatal Hernia, IBS, IBD, PUD, Ulcerative Colitis | ▪ Use only if needed<br>▪ IF necessary, use lowest effective dose (200-400 mg) for shortest amount of time along w/ PPI | First Line<br>▪ Use scheduled timing for best pain management |
| Heart Attack | ▪ Use post (SOMETHING) for only for short durations<br>o Elective surgeries should wait 2 months post-MI anyways<br>o Must be taken at least 2 hours after taking daily low-dose ASA for no interference w/ cardio protective effect of ASA | First line |
| Alcohol Dependency | Use w/ PPI or Sucralfate for GI protection | Avoid or significantly limit APAP |
| Liver Impairment<br>▪ Mild (Child-Pugh Class A) | Short term use = safe | Short term use = safe |
| Liver Impairment<br>▪ Moderate (Child-Pugh Class B, fibrosis, compensated cirrhosis) | AVOID<br>▪ IF necessary, use lowest effective dose (Celecoxib or Ibuprofen) for shortest amount of time<br>▪ Diclofenac should be avoided due to increased hepatotoxicity | Treatment of choice (MAX total APAP intake = 2 g/day) |
| Liver Impairment<br>▪ Severe (Child-Pugh Class C, decompensated cirrhosis w/ ascites or esophageal varices) | AVOID | Treatment of choice (MAX 1 g/day) |
| Liver Impairment w/ active ethanol abuse | AVOID (referral to pain management) | AVOID (referral to pain management) |
| Pregnancy | ▪ Used minimally during 1st trimester<br>▪ Avoid during 3rd trimester | First Line<br>▪ Use scheduled timing for best pain management |
| Renal Impairment / Nephropathy | NSAIDs should be avoided if:<br>▪ Creatinine Clearance [CrCl] <30 mL/min.<br>▪ Estimated Glomerular Filtration Rate [eGFR] <30 mL/min.<br>▪ Estimated Glomerular Filtration Rate [eGFR] 30 - 60 mL/min. when there is concurrent disease, such as diabetes.<br>▪ Really any stage of CKD should warrant avoidance unless needed | Require prolonged dosing intervals if:<br>▪ Glomerular Filtration Rate [GFR] 10-50 mL/min<br>o limit dosing to q6h<br>▪ Glomerular Filtration Rate [GFR] <10 mL/min/<br>o Limit dosing to q8h |

**PRE-OPERATIVE NSAIDs***

| Preoperative Medications | Recommended Dose | Timing |
|---|---|---|
| Ibuprofen | 400 mg | 30 mins. prior to procedure |
| Naproxen Sodium | 550 mg | 1 hr. prior to procedure** |
| Naproxen | 500 mg | 1 hr. prior to procedure |
| Diclofenac Potassium | 100 mg | 30 mins. prior to procedure |
| Diclofenac Sodium | 50 mg | 1 hr. prior to procedure |
| Acetaminophen | 650 mg | 30 mins. prior to procedure |

*NSAIDs list is not all-inclusive; NSAID selection should be guided by patient-specific factors, and individual facility protocols and medication formulary

**Naproxen Sodium has faster absorption and onset than Naproxen base.

**NSAID SAFETY COMPARISIONS**

| DRUG | COX-2 Selectivity *(in vitro)* | GI Risk | Cardiovascular Risk |
|---|---|---|---|
| ACETIC ACID - NSAIDS | | | |
| **Diclofenac Na** | High | Moderate | High |
| **Etodolac** | High | Low | Moderate |
| PROPIONIC ACID - NSAIDS | | | |
| **Ibuprofen** | Moderate | Low | Moderate - High |
| **Naproxen** | Low | Moderate – High | Low |

**From Pharmacist's Letter / Prescriber's Letter November 2011 (PL Detail-Document #271106)*

**POST-OPERATIVE NSAIDs***

| NSAID | Recommended Dose | Max Daily Dose | Tp** *(hours)* | t 1/2 *(hours)* | Analgesic Onset *(hours)* | Analgesic Duration *(hours)* |
|---|---|---|---|---|---|---|
| **PROPIONIC ACIDS** | | | | | | |
| Ibuprofen | 400-800 mg q6h | 3,200 mg | 1-2 | 1.8-2 | 0.5 | 4-6 |
| Naproxen (base) | 500 mg q12h or 250 mg q6h | 1,000 mg | 2-4 | 12-15 | 1 | up to 7 |
| Naproxen Sodium | 550 mg q12h or 275 mg q6h | 1,100 mg | 1-2 | 12-13 | 1 | up to 7 |
| **ACETIC ACIDS** | | | | | | |
| Diclofenac Sodium | 50 mg q8h *(can do 100 mg loading dose)* | 150 mg | 2-3 | 1-2 | 1 | 4-6 |
| Diclofenac | | | 1-2 | 1-2 | 0.5 | 4-6 |
| Etodolac | 400 mg q8h or 200 mg q6h | 1,200 mg | 1-2 | 7.3 | 0.5 | 4-12 |

*** Tp = Time to peak response*

## References


1. Becker D. E. (2007). Cardiovascular drugs: implications for dental practice part 1 - cardiotonics, diuretics, and vasodilators. *Anesthesia progress*, *54*(4), 178–187. doi:10.2344/0003-3006(2007)54[178:CDIFDP]2.0.CO;2
2. Indian Health Service Division of Oral Health (DOH) & Indian Health Service National Committee on Heroin, Opioid and Pain Efforts (HOPE) Guideline on Recommendations for Management of Acute Dental Pain, [Internet, last updated July 2018; April 9, 2019], Available from https://www.ihs.gov/doh/documents/Recommendations%20for%20Acute%20Dental%20Pain%20Management.pdf
3. "NSAIDs Pharmacology | All the Facts in One Place!" *PharmaFactz*, 8 Nov. 2018, pharmafactz.com/nsaids-pharmacology/.
4. Oral Surgery Handbook 2016-2017 from Dr. Maria Nord

# Drug Interactions Important With Pain Medications



| NSAIDS | PATIENT MEDICATION | RESULTS & MANAGEMENT |
|---|---|---|
| | | |
| NSAIDS | | |
| (including aspirin and COX-2s) | **Anticoagulants (apixaban, dabigatran,edoxaban,,rivaroxaban,warfarin)** | **Increase risk of bleeding disorders in anticoagulated patient. AVOID COMBO** |
| | Antihypertensives (all but CCBs) (ACEI,B-blockers, diuretics) | Decreased antihypertensive effect. Monitor Blood Pressure. |
| | Cyclosporine (Neoral, Sandimmune) | Nephrotoxicity of both agents may be increased. Avoid if possible. |
| | **Combo of ACEor ARB & Diuretic** | **30% increase in risk of kidney injury-called the TRIPLE WHAMMY on the kidney!** |
| | Fluoroquinolones | Increased CNS stimulation |
| | Lithium | Increased lithium levels. Use sulindac |
| | Methotrexate (Rheumatrex, Mexate) | Toxicity of methotrexate may be increased. Monitor. |
| | Phenytoin (Dilantin, g) | Increased phenytoin levels |
| | Probenecid (Benemid, g) | Increased toxicity of NSAIDs possible. |
| | **Salicylates** | **Decreased NSAID levels with increased GI effects. AVOID CONCURRENT USE.** |
| | SSRIs | Possible increased risk of bleeding but not thought to be clinically significant |
| COX-2 SELECTIVE NSAID | | |
| Celecoxib (Celebrex) | $2C_9$ inhibitors (fluconazole) | Increased celecoxib levels |
| Ketorolac (Toradol,g) | Salicylates | Increased Ketorolac free drug conc. |
| Acetaminophen only | Barbiturates, Carbamazepine, Phenytoin, Rifampin, Sulfinpyrazone | The hepatotoxicity of APAP may be increased by high dose or long term administration of these drugs. |
| | Ethanol | Increased hepatotoxicity of APAP with chronic ethanol ingestion. |
| Tramadol (Ultram, Ultracet, g) | **Any drug that enhances serotonin activity(SSRI antidepressants,"triptans" for acute migraine** | **Possible serotonin syndrome. AVOID CONCURRENT USE**. |
| | Carbamazepine (Tegretol,g) | Decreased tramadol levels |
| | MAOI's (Marplan, Nardil, Parnate) | MAOI toxicity enhanced |
| | Ritonavir (Norvir) | Increased Tramadol effect. AVOID COMBO. |
| **NARCOTIC ANALGESICS** | | |
| Opioid analgesics | Alcohol, CNS depressants, local anesthetics, antidepressants, antipsychotics, antihistamines, cimetidine, skeletal muscle relaxants, BZDPs | Increased CNS and respiratory depression may occur. Use cautiously. |
| | Antimuscarinics and antidiarrheals (e.g. atropine), antihypertensives (e.g. guanadrel) | Opioids increase the effects of these drugs. Use cautiously. |
| | Buprenorphine, nalbuphine, naltrexone | These drugs block the analgesic effects of opioids. Substitute with NSAIDs. |
| Codeine (Hydrocodone lesser extent) | $2D_6$ Inhibitors, Amiodarone, Cimetidine, Desipramine, Fluoxetine, Paroxetine, Propafenone, Quinidine, Ritonavir | Inhibition of biotransformation of Codeine to active analgesic form. Use different narcotic on $2D_6$ Inhibitor patients. |
| **Meperidine (Demerol, g)/Fentanyl/All Fentanyl derivatives** | **MAOIs (Marplan, Nardil, Parnate, Furoxone) selegiline (Eldepryl)** | **Hypertension/hyperpyrexia or coma and hypotension.AVOID CONCURRENT USE if MAOI taken within 14 days**. |
| | Protease inhibitors | Increased CNS/resp. depression- AVOID |
| | Ritonavir (Norvir) | Large increase in meperidine. AVOID COMBO. |

| AGENTS FOR PARENTERAL ANESTHESIA | | |
|---|---|---|
| Antihistamines | | |
| diphenhydramine (Benadryl)<br>hydroxyzine (Atarax, Vistaril)<br>Promethazine (Phenergan) | Anticholinergics | Increased dry mouth, tachycardia, urinary retention. Monitor. |
| | CNS depressants (alcohol, narcotics) | Enhanced duration and intensity of sedation. Reduce dosages. |
| Barbiturates | | |
| methohexital (Brevital,g) | CNS depressants (alcohol, narcotics) | Additive CNS and resp. depression |
| | Furosemide (Lasix, g) | Orthostatic hypotension |
| | Sulfisoxazole IV | Sulfa competes with barb. for binding sites. Smaller and more frequent barb. doses may have to be given. |
| Benzodiazepines | | |
| diazepam (Valium,G) | CNS depressants (anticonvulsants, alcohol) | Oversedation so may use slower titration. |
| | Cimetidine,OCs,INH,Ketoconazole, Metoprolol, Omeprazole, Propoxyphene, Propranolol,Valproic Acid | Decreased clearance of diazepam. Can avoid with lorazepam. |
| | Digoxin | Increased digoxin levels. |
| midazolam (Versed,g) | Calcium Channel Blockers or CCBs (diltiazem-Cardizem, verapamil-Isoptin,Calan, Verelan) | CCBs inhibit Cyp3A4 which prolongs the actions of midazolam. Evaluate patient factors to determine clinical significance. |
| | CNS depressants (alcohol, barbs) | Increased risk of underventilation or apnea. May prolong the effect of midazolam. |
| | Erythromycin | Increased midazolam levels. Monitor. |
| | Narcotics (morphine, meperidine, fentanyl) | Increased hypnotic effect of midazolam. More hypotension with Versed and Demerol. |
| | Saquinavir (Fortovase) | Increased midazolam levels. AVOID COMBO. |
| | Thiopental | After premed with Versed, decrease dose of thiopental for induction by 15% |
| Narcotics | | |
| fentanyl (Sublimaze,g) | Barbiturate anesthetics | Additive CNS and resp. depression. |
| | Chlorpromazine (Thorazine, g) | Increased toxicity of both agents. |
| | Cimetidine (Tagamet, g) | CNS toxicity case reports only. (confusion, apnea, |
| | Citalopram (Celexa,g) | Increased risk of serotonin syndrome |
| | Diazepam | With high dose fentanyl gives CV depression. |
| | Droperidol (Inapsine) | Hypotension < pulmonary arterial pressure. |
| | **MAOIs and furazolidone (Furoxone**) | **Risk of hypertensive crisis.AVOID COMBO** |
| | Nitrous Oxide | With high dose fentanyl may cause CV depress. |
| | Ritonavir (Norvir) | Increased fentanyl levels with Norvir |
| meperidine (Demerol, G) | Barbiturate anesthetics | Additive CNS and resp. depression |
| | Chlorpromazine (Thorazine, g) | Increased toxicity of both agents. |
| | Cimetidine (Tagamet, g) | CNS toxicity as with fentanyl. |
| | **MAOIs and furazolidone (Furoxone**) | **Meperidine has predictable and sometimes fatal reactions with use within 14 days. Typel :coma,resp dep,cyanosis,low BP Type2:seizures,hyperpyrexia,hypertension,tachy-cardia. AVOID CONCURRENT USE!!!!!** |
| | Phenytoin (Dilantin, g) | Decrease meperidine effects by increased hepatic metabolism |
| Miscellaneous | | |
| etomidate (Amidate) | Verapamil | Possibility of prolonged anesthesia |
| ketamine (Ketalar,g) | Barbiturates | Prolonged recovery time. |
| | Thyroid Hormone | May produce hypertension/tachycardia |
| | Tubocurarine and nondepolarizing muscle relaxants | Ketamine may increase neuromuscular effects and result in prolonged resp. depression. |
| Propofol (Diprivan, G) | CNS depressants (sedative/hypnotic, inhalation anesthetics, narcotics) | Increase CNS depression of propofol. Premed with narcotics may lead to more pronounced decrease in systolic, diastolic, and mean arterial pressures and cardiac output. |

# What You Need to Know About Opioid Pain Medicines

***This guide is for you!*** Keep this guide and the Medication Guide that comes with your medicine so you can better understand what you need to know about your opioid pain medicine. Go over this information with your healthcare provider. Then, ask your healthcare provider about anything that you do not understand.

## *What are opioids?*

Opioids are strong prescription medicines that are used to manage severe pain.

## *What are the serious risks of using opioids?*

- Opioids have serious risks of addiction and overdose.
- **Too much opioid medicine in your body can cause your breathing to stop – which could lead to death.** This risk is greater for people taking other medicines that make you feel sleepy or people with sleep apnea.
- **Addiction** is when you crave drugs (like opioid pain medicines) because they make you feel good in some way. You keep taking the drug even though you know it is not a good idea and bad things are happening to you. Addiction is a brain disease that may require ongoing treatment.

### *Risk Factors for Opioid Abuse:*

- You have:
  - » a history of addiction
  - » a family history of addiction
- You take medicines to treat mental health problems
- You are under the age of 65 (although anyone can abuse opioid medicines)

- **You can get addicted to opioids even though you take them exactly as prescribed, especially if taken for a long time.**
- If you think you might be addicted, talk to your healthcare provider right away.
- If you take an opioid medicine for more than a few days, your body becomes physically "dependent." This is normal and it means your body has gotten used to the medicine. You must taper off the opioid medicine (slowly take less medicine) when you no longer need it to avoid withdrawal symptoms.

## *How can I take opioid pain medicine safely?*

- Tell your healthcare provider about **all** the medicines you are taking, including vitamins, herbal supplements, and other over-the-counter medicines.
- Read the Medication Guide that comes with your prescription.
- Take your opioid medicine exactly as prescribed.
- Do not cut, break, chew, crush, or dissolve your medicine. If you cannot swallow your medicine whole, talk to your healthcare provider.
- When your healthcare provider gives you the prescription, ask:
  - » How long should I take it?
  - » What should I do if I need to taper off the opioid medicine (slowly take less medicine)?
- Call your healthcare provider if the opioid medicine is not controlling your pain. Do not increase the dose on your own.
- Do not share or give your opioid medicine to anyone else. Your healthcare provider selected this opioid and the dose just for you. A dose that is okay for you could cause an overdose and death for someone else. Also, it is against the law.
- Store your opioid medicine in a safe place where it cannot be reached by children or stolen by family or visitors to your home. Many teenagers like to experiment with pain medicines. Use a lock- box to keep your opioid medicine safe. Keep track of the amount of medicine you have.

- Do not operate heavy machinery until you know how your opioid medicine affects you. Your opioid medicine can make you sleepy, dizzy, or lightheaded.

### *What should I avoid taking while I am taking opioids?*

Unless prescribed by your healthcare provider, you should avoid taking alcohol or any of the following medicines with an opioid because it may cause you to stop breathing, which can lead to death:

- Alcohol: Do not drink any kind of alcohol while you are taking opioid medicines.
- Benzodiazepines (like Valium or Xanax)
- Muscle relaxants (like Soma or Flexeril)
- Sleep medicines (like Ambien or Lunesta)
- Other prescription opioid medicines

## *What other options are there to help with my pain?*

Opioids are not the only thing that can help you control your pain. Ask your healthcare provider if your pain might be helped with a non-opioid medication, physical therapy, exercise, rest, acupuncture, types of behavioral therapy, or patient self-help techniques.

## *What is naloxone?*

- Naloxone is a medicine that treats opioid overdose. It is sprayed inside your nose or injected into your body.
- Use naloxone if you have it and call 911 or go to the emergency room right away if:
  - You or someone else has taken an opioid medicine and is having trouble breathing, is short of breath, or is unusually sleepy
  - A child has accidentally taken the opioid medicine or you think they might have
- Giving naloxone to a person, even a child, who has not taken an opioid medicine will not hurt them.

***Naloxone is never a substitute for emergency medical care. Always call 911 or go to the emergency room if you've used or given naloxone.***

## *Where can I get naloxone?*

- There are some naloxone products that are designed for people to use in their home.
- Naloxone is available in pharmacies. Ask your healthcare provider about how you can get naloxone. In some states, you may not need a prescription.
- When you get your naloxone from the pharmacy, read the **Patient Information** on how to use naloxone and ask the pharmacist if anything is unclear.
- Tell your family about your naloxone and keep it in a place where you or your family can get to it in an emergency.

**When you no longer need your opioid medicine, dispose of it as quickly as possible. The Food and Drug Administration recommends that most opioid medicines be promptly flushed down the toilet when no longer needed, unless a drug take-back option is immediately available. A list of the opioid medicines that can be flushed down the toilet is found here:** https://www.fda.gov/drugdisposal

## *What things should I know about the specific opioid medicine that I am taking?*

- Your healthcare provider has prescribed _____ for you. Read the Medication Guide for this medicine, which is information provided by your pharmacy.
- Remember this other important information about your opioid medicine:

**Dosing instructions:** _____

**Any specific interactions with your medicines:** _____

_____

## *What if I have more questions?*

- Read the Medication Guide that comes with your opioid medicine prescription for more specific information about your medicine.
- Talk to your healthcare provider or pharmacist and ask them any questions you may have.
- Visit: www.fda.gov/opioids for more information about opioid medicines.

# Opioid Omnibus Legislation

Opioid abuse continues to problem in our state. While the number of opioid prescriptions continues to decline and the number of Iowans seeking treatment grows steadily, so too does the overall number of opioid overdose deaths each year. In response, legislators have enacted a far-reaching piece of legislation aimed at addressing the problem of opioid abuse in Iowa.

## Prescription Monitoring Program

- All Prescribers Must Register for the Prescription Monitoring Program (PMP) at the Time of Renewing Their Controlled Substance act (CSA) Registration with the Iowa Board of Pharmacy (IBP).
- Prior to Issuing an Opioid Prescription, Prescribers of Their Designated Agents Must Check the PMP. IMS WIN
    - This Requirement Does Not Apply For Patients in Hospice or a Long-Term Care Facility.
- Prescribers Who Directly Dispense Controlled Substances Must Report These Medications to the PMP.
- All Pharmacist & Prescriber PMP Reporting Must Occur Within One Business Day of Dispensing a Controlled Substance.
- The IBP is Authorized to Charge a 25% Surcharge (Approximately $11) on CSA Registration Applications to Support Added Functionality in the New PMP.
- The IBP is Authorized to Begin Issuing Targeted, Proactive Prescriber Notifications of Suspicious Patient Prescription Activity.

## Opioids

- Each Licensing Board Must Establish Rules to Discipline Practitioners who Prescribe Opioids in Quantities That Exceed Reasonable, Prudent Levels.
- Physicians, ARNPs, PAs, Dentists, and Podiatrists who Prescribe Opioids Must Receive Continuing Education Regarding the CDC Opioid Prescribing Guidelines as a Condition of License Renewal; The Existing Broad Iowa Board of Medicine Rules Requiring Continuing Education Regarding Chronic Pain Management, Are Repealed. IMS WIN

## Controlled Substance Prescriptions

- Schedule II
    - Must Be Filled Within 6 Months of Issuance
    - May Not Be Refilled
- Schedule III, IV, V
    - Must Be Filled Within 6 Months of Issuance
    - May Not Be Refilled More Then 5 Times

- Beginning February 1, 2019, the IBP Shall Begin Issuing Annual Activity Report to All Prescribers, Detailing Their Controlled Substance Prescriptions From the Previous Year and a Comparison With Other Prescribers of the Same Profession and Specialty.

IOWA MEDICAL SOCIETY

## Electronic Prescribing

- Beginning January 1, 2020, All Prescriptions Must Be Issued Electronically. IMS WIN
- This Requirement Does Not Apply in the Following Situations:
    - When Directly Dispensed by a Prescriber
    - When a Patient Resides in a Nursing Home, Long-Term Care Facility, Correctional Facility, or Jail.
    - When a Prescription is Dispensed by a Veterans Administration Facility.
    - When a Prescription Requires Complicated or Lengthy Directions.
    - When a Prescription is For a Compounding Preparation Containing Two or More Components.
    - When a Prescription is Issued During a Public Health Emergency.
    - When a Prescription is Issued Pursuant to a Collaborative Practice Agreement, Standing Order, or Research Protocol.
    - When a Practice or Pharmacy is Unable to Process an Electronic Prescription Due to Temporary Technical or Electrical Issues.
    - When a Prescription is Issued in an Emergency Situation.
- Prescribers and Pharmacies Who Are Unable to Comply With the Electronic Prescribing Requirements by January 1, 2020, May Petition the IBP For a Waiver to these Requirements.
    - Waivers are Based Upon Economic Hardship, Technical Limitations, or Other Extenuating Circumstances.
    - Waivers May Not Exceed One Year, but May be Renewed Annually by the IBP.
- Prescribers who Fail to Comply With These Requirements a Subject to an Administrative Penalty, Issued by Their Licensing Board, of $250 per Violation, Up to $5,000 Annually.
- Administrative Penalties Are Not Considered a Disciplinary Action and Are Not Reportable.

## Other Provisions of Interest

- First Responders Must Report All Naloxone Administration to IDPH for Entry Into the PMP
- IBP Authority to Respond to Inappropriate Prescribing Practices is Expanded to Allow Actions Other Than Suspending, Revoking, or Refusing to Renew a CSA.
- Creates Good Samaritan Protections for Contacting Authorities in an Overdose Situation. IMS WIN
- Numerous Temporarily-Scheduled Controlled Substances are Permanently Scheduled at the Same Levels Originally Set by the IBP.

## IMS Wins

| Original Bill | Final Bill |
|---|---|
| Prescriber Must Directly Check PMP Prior to Issuing All Controlled Substance Prescriptions. | Prescriber or Designated Agent Must Check PMP Prior to Issuing an Opioid Prescription. |
| All Physicians, Nurses, and Dentists Must Receive Continuing Education on CDC Opioid Prescribing Guidelines. | Physicians, ARNPS, PAs, Dentists, and Podiatrists Who Prescribe Opioids Must Receive Continuing Education on CDC Opioid Prescribing Guidelines; The Board of Medicine Chronic Pain Management Continuing Education Mandate is Repealed. |
| All Prescriptions Must be Electronically Prescribed Beginning July 1, 2019. | All Prescriptions Must be Electronically Prescribed Beginning January 1, 2020. |