Mission:
To protect, promote & improve the health of all people in Florida through integrated state, county & community efforts.

Vision: To be the Healthiest State in the Nation

Ron DeSantis
Governor

# Department of Health

## Teleconference call on pamphlet about nonopioid alternatives for the treatment of pain

**Monday, June 17, 2019 at 12:00 p.m.**

If you would like to attend this public meeting, call:

**Meet-Me #: (888) 585-9008**

After you dial-in, you will be asked to enter the participation code: **432-162-565#**

## AGENDA

**Introductory remarks**

**New Business:** Discuss the department's development of the pamphlet on nonopioid alternatives for the treatment of pain required by House Bill 451 and take input from interested parties on information to be included in the pamphlet.

**Adjourn:**

Florida Department of Health
Board of Medicine
4052 Bald Cypress Way, Bin C-03 • Tallahassee, Florida 32399
PHONE: 850/245-4131 • FAX: 850/488-0596 and 850/412-1268
FloridaHealth.gov

PHAB Accredited Health Department
Public Health Accreditation Board

# Notice of Meeting/Workshop Hearing

**DEPARTMENT OF HEALTH**

The **Department of Health** announces a public meeting to which all persons are invited.

**DATE AND TIME:** June 17, 2019, 12:00 Noon
**PLACE:** Meet-Me #: 1(888)585-9008 Participant Code: 432-162-565

**GENERAL SUBJECT MATTER TO BE CONSIDERED:** Information to include in the pamphlet on nonopioid alternatives for the treatment of pain. A copy of the agenda may be obtained at https://flboardofmedicine.gov/meeting-information/.

**A copy of the agenda may be obtained by contacting:** Board of Medicine (BOM) Meeting Materials at BOM.MeetingMaterials@flhealth.gov or call at (850)245-4131.

For more information, you may contact: Board of Medicine (BOM) Meeting Materials at BOM.MeetingMaterials@flhealth.gov or call at (850)245-4131.

1
2 An act relating to nonopioid alternatives; amending s.
3 456.44, F.S.; providing legislative intent; requiring
4 the Department of Health to develop and publish on its
5 website an educational pamphlet regarding the use of
6 nonopioid alternatives for the treatment of pain;
7 requiring the pamphlet to include specified
8 information, including the advantages and
9 disadvantages of the use of such alternatives;
10 providing requirements for health care practitioners;
11 providing an effective date.
12
13 Be It Enacted by the Legislature of the State of Florida:
14
15 Section 1. Subsection (7) is added to section 456.44,
16 Florida Statutes, to read:
17 456.44 Controlled substance prescribing.—
18 (7) NONOPIOID ALTERNATIVES.—
19 (a) The Legislature finds that every competent adult has
20 the fundamental right of self-determination regarding decisions
21 pertaining to his or her own health, including the right to
22 refuse an opioid drug listed as a Schedule II controlled
23 substance in s. 893.03 or 21 U.S.C. s. 812.
24 (b) The department shall develop and publish on its
25 website an educational pamphlet regarding the use of nonopioid

26 alternatives for the treatment of pain. The pamphlet shall, at a
27 minimum, include:
28 1. Information on available nonopioid alternatives for the
29 treatment of pain, including nonopioid medicinal drugs or drug
30 products and nonpharmacological therapies.
31 2. The advantages and disadvantages of the use of
32 nonopioid alternatives.
33 (c) Except in the provision of emergency services and
34 care, as defined in s. 395.002, before providing anesthesia or
35 prescribing, ordering, dispensing, or administering an opioid
36 drug listed as a Schedule II controlled substance in s. 893.03
37 or 21 U.S.C. s. 812 for the treatment of pain, a health care
38 practitioner, excluding those licensed under chapter 465, must:
39 1. Inform the patient of available nonopioid alternatives
40 for the treatment of pain, which may include nonopioid medicinal
41 drugs or drug products, interventional procedures or treatments,
42 acupuncture, chiropractic treatments, massage therapy, physical
43 therapy, occupational therapy, or any other appropriate therapy
44 as determined by the health care practitioner.
45 2. Discuss the advantages and disadvantages of the use of
46 nonopioid alternatives, including whether the patient is at a
47 high risk of, or has a history of, controlled substance abuse or
48 misuse and the patient's personal preferences.
49 3. Provide the patient with the educational pamphlet
50 described in paragraph (b).

51 4. Document the nonopioid alternatives considered in the
52 patient's record.
53 Section 2. This act shall take effect July 1, 2019.

**Chiropractic Care.** *Chiropractors try to correct the body's alignment to relieve pain and improve function and to help the body heal itself.*

**Psychotherapy.** *These professionals can offer many avenues for pain relief and management. For example, they can help you reframe negative thinking patterns about your pain that may be interfering with your ability to function well in life, work, and relationships. Seeing a mental health professional does not mean the pain is "all in your head."*

**Transcutaneous electrical nerve stimulation (TENS).** *This technique employs a very mild electrical current to block pain signals going from the body to the brain*

**Interventional pain management.** *"Interventional" procedures might include an injection of an anesthetic medicine or steroid around nerves, tendons, joints or muscles; spinal cord stimulation; insertion of a drug delivery system; or a procedure to stop a nerve from working for a long period of time.*

## Helpful Hints and Links

*When you are selecting a healthcare practitioner, you can verify their license and find more informtion at: https://appsmqa.doh.state.fl.us/MQASearchServices/Home*

*You can find more information at these links.*
**National Institute of Health** *https://nccih.nih.gov/health/pain/chronic.htm*
**Center for Disease Control** *https://www.cdc.gov/drugoverdose/pdf/nonopioid_treatments-a.pdf*

**Contact Us**
*Phone: (850)488-0595*
*Email: MedicalQualityAssurance@flhealth.gov*
*Web: www.floridahealth.gov*

Florida HEALTH

# Information on Nonopioid Alternatives for the Treatment of Pain

A guide to working with your healthcare practitioner to manage pain

*Prescription opioids are sometimes used to treat moderate-to-severe pain. Because prescription opioids have a number of serious side effects, it is important for you to ask questions, learn more about opioids, and the benefits and risks. Make sure you're getting care that is safe, effective, and right for you.*

This pamphlet provides information about nonopioid alternative treatments to manage pain. You and your healthcare practitioner can develop a course of treatment that uses multiple methods and modalities, including prescription medications such as opioids, and discuss the advantages and disadvantages of each approach.

Before making a decision with your healthcare practitioner about how to treat your pain, you should consider options so that your treatment provides the greatest benefit with the lowest risk.

**Cold and heat.** *Cold can be useful soon after an injury to relieve pain, decrease inflammation and muscle spasms, and help speed recovery. Heat raises your pain threshold and relaxes muscles.*

**Exercise.** *Staying physically active, despite some pain, can play a helpful role for people with some of the more common pain conditions, including low back pain, arthritis, and fibromyalgia.*

**Weight loss.** *Many painful health conditions are worsened by excess weight. It makes sense, then, that losing weight can help to relieve some kinds of pain.*

**Over-the-counter medications.** *Pain relievers that you can buy without a prescription, such as acetaminophen (Tylenol) or nonsteroidal anti-inflammatory drugs (NSAIDs) like aspirin, ibuprofen (Advil, Motrin), and naproxen (Aleve, Naprosyn) can help to relieve mild to moderate pain.*

**Yoga and tai chi.** *These mind-body and exercise practices incorporate breath control, meditation, and movements to stretch and strengthen muscles. They may help with chronic pain conditions such as fibromyalgia, low back pain, arthritis, or headaches.*

**Physical therapy (PT) and occupational therapy (OT).** *PT helps to increase flexibility and range of motion which can provide pain relief. PT can also restore or maintain your ability to move and walk. OT helps improve your ability to perform activities of daily living, such as dressing, bathing, and eating.*

**Massage therapy.** *Therapeutic massage may relieve pain by relaxing painful muscles, tendons, and joints; relieving stress and anxiety; and possibly impeding pain messages to and from the brain.*

**Acupuncture.** *Acupuncture involves inserting extremely fine needles into the skin at specific points on the body. This action may relieve pain by releasing endorphins, the body's natural painkilling chemicals. It may also influence levels of serotonin, the brain transmitter involved with mood.*

DOH Pamphlet Non-opioid Alternatives

- Many times patients do not feel comfortable speaking with their healthcare providers about their concerns regarding their medical care. Perhaps, they feel rushed. Perhaps they feel embarrassed. Perhaps they are afraid. Perhaps, they are simply uneducated about the fact that there are many ways to undergo anesthesia and manage both acute and chronic pain conditions that do not involve opioids. Many patients will simply "do what the doctor tells [them] to do" without truly realizing that they have the right and the obligation to work with their healthcare provider to ensure the best possible healthcare.
- Preconceived notions about opioids include the following: opioids are necessary, opioids are beneficial, opioids are safe and opioids effectively manage pain. These statements are not correct.
- Non-opioid anesthesia and post-operative analgesia (pain) management techniques involve the elimination of opioids, which are replaced with a variety of alternative medications called multimodal agents that block the nociceptive (pain) pathway. Opioids are avoided to eliminate their many costly side effects including nausea, vomiting, constipation, ileus, urinary retention, somnolence, dysphoria, tolerance, dependence, abuse, addiction, opioid induced hyperalgesia (OIH), respiratory depression and opioid induced ventilatory impairment associated with surgery and the post-operative period.
- Non-opioid anesthesia refers to the anesthetic technique of using medications to provide anesthesia and post-operative analgesia (pain relief) that do not include opioids. By replacing opioids with medications carefully selected for their ability to block the process of surgical hyperalgesia (pain) and provide beneficially secondary effects, such as reductions in respiratory depression, nausea/vomiting, pruritis (itching), inflammation, and better wound healing.
- By incorporating the variety of anesthetic and analgesic medications that block the process of surgical hyperalgesia (pain) and lack the adverse effects of opioids, anesthesia providers can provide a safer anesthetic that drastically reduces the amount of post-operative pain.

Chou R, Gordon DB, de Leon-Casasola OA, et al. Management of Postoperative Pain: A Clinical Practice Guideline From the American Pain Society, the American Society of Regional Anesthesia and Pain Medicine, and the American Society of Anesthesiologists' Committee on Regional Anesthesia, Executive Committee, and Administrative Council. Journal of Pain, 2016;17(2):131-157. https://doi.org/10.1016/j.pain.2015.12.008

Lavand'homme, P Estebe, J-P. Opioid-free anesthesia. Current Opinions in Anaesthesiology, 2018; 1. doi: 10.1097/ACO.0000000000000485

Mulier, J. Opioid free general anesthesia: a paradigm shift? Rev Esp Anestesiol Reamin 2017; 64:427-430. https://www.ncbi.nlm.nih.gov/pubmed/28431750#

# Opioid-Free Recipe Swap

Anesthetists share the ingredients to their multimodal approach to 3 painful surgeries.

**Adam Schneider, CRNA**
Paris (Ill.) Community Hospital
adschne@gmail.com

**Robert Bland, CRNA**
PeaceHealth Peace Harbor Medical Center
Florence, Ore.
rblandpeacehealth@gmail.com

**ina O'Con, DNAP, CRNA**
Natch es (La.) Regional Medical Center
The ety for Opioid Free Anesthesia
kvocon@gmail.com

We asked 3 nurse anesthetists to share their pain management recipes during each stage of surgery for 3 notoriously painful procedures: total knees, shoulders and total hips. There was one condition: no opioids.

**RECIPE**

From the kitchen of:
Adam Schneider, CRNA

## Total Knee Arthroplasty

| Pre-op | Intra-op |
|---|---|
| • 1000 mg Tylenol | • Spinal Anesthetic |
| • 100 mcg clonidine | • 50 mcg/kg/min propofol |
| • 300 mg gabapentin | • 0.25 mg/kg/hr ketamine |
| | • 250-500 mg/hr magnesium |
| **Post-op** | • 1.0 mg/kg/hr lidocaine |
| 10-14 mL/hr 0.2% ropivacaine | |
| 15-30 mg toradol (optional) | |

Mr. Schneider explains:

**Pre-op:** Give the patient oral Tylenol, clonidine and gabapentin, and administer an ultrasound guided adductor canal peripheral nerve block with catheter using 15-20 cc of 0.5% ropivacaine and 4 mg decadron. The patient can still extend his leg and walk with an adductor canal nerve block so we can get him ambulating sooner.

**Intra-op:** Spinal anesthetic for this case is preferred. Administer the ketamine, magnesium, and lidocaine infusion together to help with

surgical pain during and after the procedure for a narcotic sparing technique.

**Post-op:** Overall goal for pain management is to provide superior analgesia without the need for narcotics. An adductor canal nerve block catheter will keep them pain free for 3 days using a 0.2% ropivacaine infusion at 10-14 mL/hr. Depending on the patient's risk factors, schedule gabapentin or Tylenol 3 times a day for post-op pain management. You can give 15-30 mg Toradol for any break through pain. We can do a 2-hour knee replacement with no opioids using this method.

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**RECIPE**

From the kitchen of:
Robert Bland, CRNA

## Total Knee Arthroplasty

**Pre-op:**
- 1000 mg APAP IV
- 200 mg celecoxib
- 300-400 mg gabapentin

**Intra-op:**
- Exparel — encapsulated bupivacaine (surgeon administers at surgical site)
- Ketamine + decadron (optional)
- 2 mg of magnesium sulfate (optional)
- 0.5% ropivacaine + 10mg decadron (optional)

**Post-op:**
- 1000 mg APAP IV
- Oral APAP
- 15 mg ketorolac IV (optional)
- 0.5% ropivacaine + 10 mg decadron (optional)

Mr. Bland explains:

**Pre-op:** Give the APAP IV with the celecoxib and gabapentin.

**Intra-op:** The surgeon will initiate an Exparel infiltration and will inject the encapsulated bupivacaine into the planes of the tissue. This is usually adequate to keep the patient pain free through post-op for 3-days. If necessary, give ketamine, decadron or 2mg of magnesium sulfate.

**Post-op:** Repeat the APAP IV 6 hours after the procedure. Provide the patient with oral APAP for two days. If necessary, administer an ultrasound guided adductor canal block or IPACK block with 0.5% ropivacaine plus decadron for break through pain. Or you can schedule a ketorolac IV every 8 hours twice daily.

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**RECIPE**

From the kitchen of:
Katrina O'Con, DNAP, CRNA

## Shoulder

**Pre-op:**
- 20 cc of 0.5% ropivacaine + epinephrine

**Intra-op:**
- Ketamine (optional)
- Propofol (optional)

Dr. O'Con explains:

**Pre-op:** Administer an interscalene nerve block with ropivacaine + epi at each block site. The nerve blocks are adequate to keep the patient pain-free for 12 hours after surgery.

**Intra-op:** The anesthetist may administer minimal amounts of ketamine and propofol if necessary and if surgery is done with blocks as the sole anesthetic.

**Post-op:** Handled by surgeon.

## RECIPE

From the kitchen of:
Adam Schneider, CRNA

### Shoulder

**Pre-op**
- 1000 mg Tylenol
- 100 mcg clonidine
- 300 mg gabapentin

**Intra-op**
- 0.25 mg/kg/hr ketamine
- 250-500 mg/hr magnesium
- 1.0 mg/kg/hr lidocaine

**Post-op**
8-10 ml/hr 0.2% ropivacaine
15-30 mg toradol (optional)

**Anesthesia Maintenance:** Inhaled anesthetics at a reduced MAC

Mr. Schneider explains:

**Pre-op:** Give the patient Tylenol, clonidine and gabapentin and administer an ultrasound guided interscalene brachial plexus nerve block with catheter using 10-15 cc of 0.5% ropivacaine with 4mg decadron. I use ropivacaine because it is less cardiotoxic unless there is a drug shortage; then I'll use bupivacaine.

**Intra-op:** General anesthesia with endotracheal tube. Administer the ketamine, magnesium and lidocaine infusion together to help with surgical pain during and after the procedure for a narcotic sparing technique. Inhaled anesthetic gas at a reduced percentage for maintenance.

**Post-op:** Overall goal for pain management is to provide superior analgesia without the need for opioids. An interscalene nerve block with catheter will drastically reduce pain for 3 days using a 0.2% ropivacaine infusion at 8-10 mL/hr. Depending on the patient's risk factors, schedule gabapentin or Tylenol 3 times a day for post-op pain management. 15-30 mg Toradol can be given for any break through pain. This regiment typically helps get our patients home a day sooner than expected due to superior pain control.

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## RECIPE

From the kitchen of:
Robert Bland, CRNA

### Hips

**Pre-op:**
- 1000 mg APAP IV
- 200 mg celecoxib
- 300-400 mg gabapentin

**Intra-op:**
- Exparel - encapsulated bupivacaine (surgeon)
- Ketamine + decadron (optional)
- 2 mg of magnesium sulfate (optional)
- 0.5% ropivacaine + 10mg decadron (optional)

**Post-op:**
- 1000mg APAP IV
- Oral APAP
- 15 mg ketorolac IV (optional)
- 0.5% ropivacaine + 10 mg decadron (optional)

Mr. Bland explains:

**Pre-op:** Give the APAP IV with the celecoxib and gabapentin.

**Intra-op:** The surgeon will initiate an Exparel infiltration and will inject the encapsulated bupivacaine into the planes of the tissue. This is usually adequate to keep the patient pain free through post-op for 3 days. If necessary, give ketamine, decadron or 2mg of magnesium sulfate.

**Post-op:** Repeat the APAP IV 6 hours after the procedure. Provide the patient with oral APAP for 2 days. If necessary, administer an ultrasound-guided fascia iliaca block with 0.5% ropivacaine plus decadron for breakthrough pain or you can schedule a ketorolac IV every 8 hours twice daily.

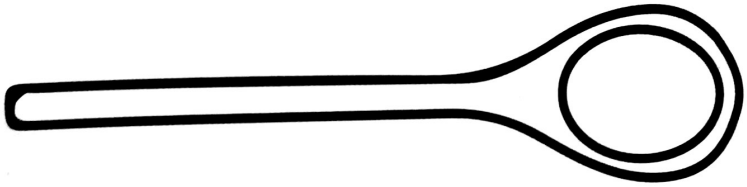
## RECIPE

From the kitchen of:
Katrina O'Con, DNAP, CRNA

### Hips

**Pre-op:**
- 40cc of 0.5% ropivacaine + epinephrine
- 1-1.3mL of 1% tetracaine

**Intra-op:**
- Ketamine (optional)
- Propofol (optional)



Dr. O'Con explains:

**Pre-op:** Administer a fascia iliaca nerve block using ropivacaine + epi along with a subarachnoid nerve block using the tetracaine. The nerve blocks are adequate to keep the patient pain free for 12-hours after surgery.

**Intra-op:** The CRNA may administer minimal amounts of ketamine and propofol if necessary and if surgery is done with blocks as the sole-anesthetic.

**Post-op:** Handled by surgeon. OSM

# Pain Management & Dosing Guide

Updated October 2017

PAMI ED
Pain Assessment and Management Initiative

http://pami.emergency.med.jax.ufl.edu/

## Pain Management and Dosing Guide Includes:

- Stepwise Approach to Pain Management and Procedural Sedation
- Non-opioid Analgesics, Opioid Prescribing and Equianalgesic Chart, and Opioid Cross-Sensitivities
- Intranasal and Nebulized Medications
- Procedural Sedation and Analgesia (PSA) Medications
- Pain Management, Discharge and Patient Safety Considerations
- Nerve Blocks, Neuropathic and Muscle Relaxer Medications
- Ketamine Indications and Dosing
- Topical and Transdermal Medications
- Nonpharmacologic and other Interventions

**TAKE A VIDEO TOUR OF THE DOSING GUIDE HERE!**

## Stepwise Approach to Pain Management

**1. Situation Checkpoint**
What are you trying to accomplish?
analgesia, anxiolysis, sedation, or procedure.

**2. Developmental/Cognitive Checkpoint**
What is the patient's development stage?

**3. Family Dynamic Checkpoint**
Who is caring for the patient?
What are the family dynamics?

**4. Facility Checkpoint**
Type of staffing and setting, team experience, patient volume, etc.

**5. Patient Assessment Checkpoint**
Review patient's risk factors and history.

**6. Management Checkpoint**
Choose your "ingredients" for pharmacologic and nonpharmacologic "recipe."

**7. Monitoring & Discharge Checkpoint**
Joint Commission standards, reassessments, facility policies, discharge and transportation considerations.

Funding provided by Florida Medical Malpractice Joint Underwriting Association (FMMJUA) and University of Florida College of Medicine-Jacksonville, Department of Emergency Medicine

PANEL A

PANEL B

## Non-Opioid Analgesics*

| Generic (Brand) | Adult | Pediatric (<12 yo) |
|---|---|---|
| Acetaminophen (Tylenol®) | 325-650 mg PO q 4-6 h Max: 4 g/d or 1 g q 4 h | 15 mg/kg PO q 4-6 h Max: 90 mg/kg/d |
| Acetaminophen IV (Ofirmev®) Use only if not tolerating PO | 1 g IV q 6 h Max: 4 g/d or 650 mg q 4 h prn pain | <50 kg 15 mg/kg IV q 6 h or 12.5 mg/kg IV q 4 h prn pain Max: 75mg/kg/d |
| Celecoxib (Celebrex®) | 100-200 mg PO daily to q 12 h Max: 400 mg/d | >2 yo 50 mg PO BID |
| Ibuprofen (Motrin®) | 400-800 mg PO q 6 to 8 h Max: 3200 mg/d | 10 mg/kg PO q 6 to 8 h Max: 40 mg/kg/d or 2400 mg/d |
| Indomethacin (Indocin®) | 25-50 mg PO q 6 to 12 h Max: 200 mg/d | 1-2 mg/kg PO q 6 to 12 h >6 mo Max: 4 mg/kg/d or 200 mg/d |
| Ketorolac (Toradol®) | 15-30 mg IV/IM q 6 h Max: 120 mg/d x 5 d | 0.5-1 mg/kg/ dose IM/IV q 6 h Max: 15-30 mg q 6 h x 5 d |
| Naproxen (Naprosyn®) | 250-500 mg PO q 8 to 12 h Max: 1500 mg/d | 5 mg/kg PO q 12 h Max: 1000 mg/d |
| Meloxicam (Mobic®) | 7.5-15 mg PO daily Max: 15 mg/d | — |

*Doses can be scheduled or PRN pain. Avoid NSAIDs in renal dysfunction, PUD, CHF, and if < 6 mo of age. Use with caution in elderly and those with cardiovascular risks.

## Opioid Prescribing and Equianalgesic Chart

| Generic (Brand) | Onset (O) and Duration (D) | | Approximate Equianalgesic Dose | | Recommended *STARTING* dose for ADULTS | | Recommended *STARTING* dose for CHILDREN (> 6 mo) | |
|---|---|---|---|---|---|---|---|---|
| | Oral | IV | Oral | IV | Oral | IV | Oral | IV |
| Morphine (MSIR®) [CII] | O: 30-60 min D: 3-6 h | O: 5-10 min D: 3-6 h | 30 mg | 10 mg | 15-30 mg q 2-4 h | 2-10 mg q 2-4 h | 0.3 mg/kg q 4 h | 0.1 mg/kg q 2-4 h |
| Morphine extended release (MS Contin®) [CII] | O: 30-90 min D: 8-12 h | — | 30 mg | 10 mg | 15-30 mg q 12 h | — | 0.3-0.6 mg/kg q 12 h | — |
| Hydromorphone (Dilaudid®) [CII] | O: 15-30 min D: 4-6 h | O: 15 min D: 4-6 h | 7.5 mg | 1.5 mg | 2-4 mg q 4 h | 0.5-2 mg q 2-4 h | 0.06 mg/kg q 4 h | 0.015 mg/kg q 4 h |
| Hydrocodone/APAP 325 mg (Norco 5, 7.5, 10®) [CII] Hycet (7.5 mg/325 mg per 15 mL) | O: 30-60 min D: 4-6 h | — | 30 mg | — | 5-10 mg q 6 h | — | 0.1-0.2 mg/kg q 4-6 h | — |
| Fentanyl [CII] (Sublimaze® Duragesic®) *Patch for opioid tolerant patients ONLY* | Transdermal O: 12-24 h D: 72 h per patch | O: immediate D: 30-60 min | — | 100 mcg (0.1 mg) | Transdermal 12-25 mcg/h q 72 h | 50 mcg q 1-2 h | Transdermal 12-25 mcg/h q 72 h | 1-2 mcg/kg q 1-2 h (max 50 mcg/dose) |
| Methadone (Dolophine®) [CII] *Opioid tolerant patients ONLY* | O: 30-60 min D: >8 h (chronic use) | — | Variable | Variable | 5-10 mg q 8-12 h | — | 0.7 mg/kg/d PO/SC/IM/IV divided q 4-6 h prn severe chronic pain | |
| Oxycodone 5, 15, 30 mg (Roxicodone®), Oxycodone 5, 7.5, 10 mg/ APAP 325 mg (Percocet®), ER=Oxycontin® [CII] | O: 10-15 min D: 4-6 h | — | 20-30 mg | — | 5-10 mg q 6 h ER 10 mg q 12 h | — | 0.05-0.15 mg/kg q 4-6 h | — |
| Tramadol (Ultram®) [CIV] ^ | O: 1 h D: 3-6 h | — | 300 mg | — | 50-100 mg q 6 h Max: 400 mg/d | — | — | — |

^ Not recommended in nursing mothers.

## Opioid Cross-Sensitivities

Phenanthrenes (related to morphine): morphine, codeine, oxycodone, hydrocodone, hydromorphone
Phenylpiperidines (related to meperidine): meperidine, fentanyl
Risk of cross-sensitivity in patients with allergies is greater when medications from the same opioid family are administered.

## Intranasal* and Nebulized Medications

| Generic | Dose | Max Dose | Comments |
|---|---|---|---|
| Fentanyl | IN: 1.5-2 mcg/kg q 1-2 h Neb: 1.7-3 mcg/kg | 3 mcg/kg or 100 mcg | Divide dose equally between each nostril |
| Midazolam (5 mg/mL) | IN: 0.3 mg/kg | 10 mg or 1 mL per nostril (total 2 mL) | Divide dose equally between each nostril |
| Ketamine | See Ketamine table | | |
| Lidocaine | Neb: 4% (40 mg/mL) 100-200 mg or 2.5-5 mL | 4.5 mg/kg total or 300 mg | >5 mg/kg associated with serious toxicity |

*Use the MOST concentrated form available with an atomizer.

PANEL C

## Procedural Sedation and Analgesia Medications

| Generic (Brand) | Adult | Pediatric | Comments |
|---|---|---|---|
| Ketamine (Ketalar®) | IV 0.5-1.0 mg/kg IM 4-5 mg/kg | >3 mo: IV 1-2 mg/kg; additional doses 0.5 mg/kg IV q 10-15 min prn; IM 4 - 5 mg/kg | Risk of laryngospasm increases with active asthma, upper respiratory infection and procedures involving posterior pharynx; vomiting occurs, commonly consider premedication. Not recommended in patients <3 mo. |
| Midazolam (Versed®) | IV 0.05-0.1 mg/kg IV slow push over 1-2 min | IV 0.05-0.1 mg/kg IN 0.2-0.3 mg/kg (IN max 10 mg) | Initial max dose 2 mg. Max total dose in >60 yo is 0.1 mg/kg Decrease dose by 33-50% when given with opioid |
| Propofol (Diprivan®) | IV 0.5-1 mg/kg slow push (1-2 min); additional doses 0.5 mg/kg | IV 1 mg/kg slow push (1-2 min); additional doses 0.5 mg/kg | Risk of apnea, hypoventilation, respiratory depression, rapid changes in sedative depth, hypotension; provides no analgesia |
| Etomidate (Amidate®) | IV 0.1 - 0.2mg/kg; additional doses 0.05mg/kg | | Risk of myoclonus (premedication w/ benzo or opioid can decrease), pain with injection, nausea and vomiting, risk of adrenal suppression; provides no analgesia |
| Ketamine + Propofol | — | IV ketamine 0.75 mg/kg + propofol 0.75 mg/kg. Additional doses: ketamine 0.5 mg/kg, propofol 0.5-1 mg/kg | See ketamine and propofol comments respectively |
| Dexme-detomidine (Precedex®) | IV 1 mcg/kg loading dose (over 10 min) followed by 0.5 to 2 mcg/kg/h continuous infusion. Use 0.5 mcg/kg for geriatric patients | IV 0.5–2 mcg/kg loading dose (over 10 min) followed by 0.5 to 2 mcg/kg/h continuous infusion IN 2-3 mcg/kg | Risk of bradycardia, hypotension, especially with loading dose or rapid infusions, apnea, bronchospasm, respiratory depression |
| Nitrous oxide | — | 50% N2O/50% O2 inhaled | Do not use if acute asthma exacerbation, suspected pneumothorax/other trapped air or head injury with altered level of consciousness |
| Morphine | IV 0.05-0.1 mg/kg or 5-10 mg | IV 0.1-0.2 mg/kg, titrated to effect | Monitor mental status, hemodynamics, and histamine release. Requires longer recovery time than fentanyl. Difficult to titrate during procedural sedation due to slower onset and longer duration of action. Reduce dosing when combined with benzodiazepines (combination increases risk of respiratory compromise) |
| Fentanyl | IV 0.5-1 mcg/kg | 1-3 yo: 2 mcg/kg; 3-12 yo 1-2 mcg/kg | 100 times more potent than morphine; Rapid bolus infusion may lead to chest wall rigidity. Reduce dosing when combined with benzodiazepines and in elderly. Preferred agent due to rapid onset and short duration. |

## Pain Management Considerations

- Type of pain: nociceptive, neuropathic, inflammatory
- Acute vs. chronic vs. acute on chronic pain exacerbation
- Pain medication history: OTC, Rx and PDMP
- Patient factors: genetics, culture, age, comorbidities, past pain experiences and mental health
- Pharmacologic Interventions: systemic, topical, transdermal, nerve block
  *- Dose based on ideal body weight*
- Nonpharmacologic Interventions
- Refer to pain, palliative or other specialists for advanced treatment

## Reassessment

- Reassess pain and monitor for medication efficacy and side effects
- Use scale that is age and cognitively appropriate
- If no improvement, adjust regimen

## Discharge Planning & Patient Safety

- Assess and counsel regarding falls, driving, work safety, and medication interactions
- Bowel regimen for opioid induced constipation
- Vital signs and oral intake before discharge
- Document all pain medications administered and response at time of disposition
- Consider OTC and nonpharmacologic options
- Can patient implement pain management plan?
  - insurance coverage, transportation, etc.

**For more information on Discharge Planning, please visit http://pami.emergency.med.jax.ufl.edu/resources/discharge-planning/**

PANEL D

## NERVE BLOCKS

| Type of Block | General Distribution of Anesthesia |
|---|---|
| Interscalene Plexus Block | Shoulder, upper arm, elbow and forearm |
| Supraclavicular Plexus Block | Upper arm, elbow, wrist and hand |
| Infraclavicular Plexus Block | Upper arm, elbow, wrist and hand |
| Axillary Plexus Block | Forearm, wrist and hand. Elbow if including musculocutaneous nerve |
| Median Nerve Block | Hand and Forearm |
| Radial Nerve Block | Hand and Forearm |
| Ulnar Nerve Block | Hand and Forearm |
| Femoral Nerve Block | Anterior thigh, femur, knee and skin over the medial aspect below the knee |
| Popliteal Nerve Block | Foot and ankle and skin over the posterior lateral portion, distal to the knee |
| Tibial Block | Foot and ankle |
| Deep Peroneal Block | Foot |
| Saphenous Nerve Block | Foot |
| Sural Nerve Block | Foot |

| Local Anesthetics† | Onset | Duration without Epi (h) | Duration with Epi (h) | Max Dose without Epi, mg/kg | Max Dose with Epi, mg/kg |
|---|---|---|---|---|---|
| Lidocaine (1%) | Rapid | 0.5–2 | 1–6 | 4.5 (300 mg) | 7 (500 mg) |
| Bupivicaine (0.5%)* | Slow | 2-4 | 4-8 | 2.5 | 3 |
| Mepivicaine (1.5%) | Rapid | 2-3 | 2-6 | 5 | 7 |
| 2-Chloroprocaine (3%) | Rapid | 0.5-1 | 1.5-2 | 10 | 15 |
| Ropivicaine (0.5%) | Medium | 3 | 6 | 2-3 | 2-3 |

*Most cardiotoxic †1% = 10mg/ml, 0.5% = 5mg/ml

## Neuropathic Pain Medications

| Generic (Brand) | Beginning dose | Max dose |
|---|---|---|
| Gabapentin* (Neurontin®) | 300 mg PO QHS to TID | 3600 mg/d |
| Pregabalin* (Lyrica®) | 50 mg PO TID | 300 mg/d** |
| SNRIs: Duloxetine (Cymbalta®)<br>Venlafaxine ER (Effexor XR®) | 30 mg PO daily†<br>37.5 mg PO daily | 60 mg/d**<br>225 mg/d |
| TCAS: Amitriptyline (Elavil®)<br>Nortriptyline (Pamelor®) | 25 mg PO QHS<br>25 mg PO QHS | 200 mg/d<br>150 mg/d |

†30 mg daily for at least 7 days to decrease nausea
*Requires dose adjustment based on renal function **Varies depending on indication

## Muscle Relaxer Pain Medications

| Generic (Brand) | Beginning dose | Max dose |
|---|---|---|
| Baclofen (Lioresal®) | 5 mg PO TID | 80 mg/d |
| Cyclobenzaprine (Flexeril®) | 5 mg PO TID | 30 mg/d |
| Methocarbamol (Robaxin®) | 1-1.5 g PO TID to 4x/day x 48-72 h, then 500-750 mg PO TID to 4x/day | 8 g/d |
| Diazepam (Valium®) | Adult: 2-10 mg PO q 6-8 h; 5-10 mg IV/IM<br>Ped: (6-12yo): 0.12-0.8 mg/kg/day PO divided q 6-8 h; 0.04-0.2 mg/kg IV/IM q 2-4 h | Peds: 0.6 mg/kg/8h IV/IM to adult max |

## Ketamine (Ketalar®) Indications and Dosing

| Indications | Starting Dose |
|---|---|
| Procedural Sedation | **IV:** Adult 0.5-1.0 mg/kg; Ped 1-2mg/kg; **IM:** 4-5 mg/kg |
| Sub-dissociative Analgesia^ | **IV:** 0.1 to 0.3 mg/kg; **IM:** 0.5-1.0 mg/kg; ***IN:** 0.5-1.0 mg/kg |
| Excited Delirium Syndrome | **IV:** 1 mg/kg; **IM:** 4-5 mg/kg |

^Consider in opioid tolerant patients or those with contraindications to opioids. Contraindications: Acute schizophrenia, pregnancy. Administer IV over 10-15 minutes to minimize side effects.
*Dosing ranges not well established.

PANEL E

## Topical and Transdermal Medications*

| Generic (Brand) | Indications | Onset (O) and Duration (D) | Recommended *STARTING* dose for ADULTS | Recommended *STARTING* dose for CHILDREN | Maximum Dose |
|---|---|---|---|---|---|
| Diclofenac sodium 1.5%, 2% w/w topical solution (Pennsaid)<br>1% gel (Voltaren gel) | Osteoarthritis | Variable | 1.5% soln: 40 drops QID<br>2% soln: 2 pumps (40mg) BID to affected knee<br>1% gel: 2 g for upper ext. or 4 g for lower ext. QID | — | 1.5% soln: 40 drops QID<br>2% soln: 2 pumps (40mg) BID<br>1% gel (2g): 8 g/d to single joint of **upper** extremity; 1% (4g): 16 g/d to single joint of **lower** extremity |
| Diclofenac epolamine 1.3% patch (Flector patch) | Acute pain from sprains, strains, contusion | Variable | 1 patch (180 mg) BID | — | 1 patch BID |
| Lidocaine 5% patch (Lidoderm patch) | Postherpetic neuralgia | Variable | 1-3 patches applied once daily, remove after 12 h | — | 3 patches in a 12 h period per day |
| Fentanyl (Duragesic®) | Persistent moderate to severe chronic pain *in opioid tolerant patients* | O: 12-24 h<br>D: 72 h per patch | 12-25 mcg/h q 72 h | | Variable |
| Capsaicin cream (Theragen®, Zostrix®, Salonpas) Exists as several OTC formulations in combination with camphor and menthol | Strains, sprains, backache or arthritis | Variable | Apply a thin layer to the affected area and gently massage up to QID | >12 yo: Apply a thin layer to the affected area and gently massage up to QID | Up to QID |
| Lidocaine 4% (L.M.X.4®) | Minor cuts, scrapes, burns, sunburn, insect bites, and minor skin irritations | O: 20-30 min<br>D: 60 min | Apply externally | | Externally 3-4 times per day. Apply in area less than 100cm² for children less than 10kg. Apply in area less than 600cm² for children between 10 and 20kg |
| LET (Lidocaine Epinephrine Tetracaine) (gel or liquid) | Wound repair (non-mucosal) | O: 10 min<br>D: 30-60 min | Topical<br>4% Lidocaine, 1:2,000 Epinephrine, 0.5% Tetracaine | | 3 mL<br>(not to exceed maximal Lidocaine dosage of 3-5 mg/kg) |
| EMLA (2.5% Lidocaine 2.5% Prilocaine)<br>Cover with occlusive dressing<br>Maximum application time 4 hours | Dermal analgesic (intact skin) | O: 60 min<br>D: 3-4 h | 20 gm | 3-12 mo (>5 kg): 2 gm<br>1-6 yo (>10kg): 10 gm<br>7-12 yo (>20kg): 20 gm | 3-12 mo max area 20cm²<br>1-6 yo max area 100cm²<br>7-12 yo max area 200cm² |
| Pain-Ease®<br>Vapocoolant/Skin Refrigerant | Cooling intact skin and mucus membranes and minor open wounds | O: immediate<br>D: few sec to 1 min | — | Spray for 4-10 sec from distance of 8-18 cm.<br>Not recommended for < 3 yo | Stop when skin turns white to avoid frostbite |
| Lidocaine | Foley catheter and nasogastric tube insertion; intubation; nasal packing; gingivostomatitis | O: 2-5 min<br>D: 30-60 min | 2% topical gel/jelly, 5% topical ointment, 2% oropharyngeal viscous topical solution | | 3-5 mg/kg |

*Dosages are guidelines to avoid systemic toxicity in patients with normal intact skin and with normal renal and hepatic function

## Nonpharmacologic Interventions (pediatric and adult)*

| Physical (Sensory) Interventions | Cognitive-Behavioral Interventions |
|---|---|
| Comfort positioning | Psychological preparation, education, or coaching |
| Cutaneous stimulation | Distraction tools: movies, games, videos, apps, toys with light/sound, bubbles |
| Nonnutritive sucking | Relaxation techniques (breathing, meditation, etc.) |
| Pacifier +/- sucrose solution | Music and singing |
| Pressure, massage | Guided imagery |
| Hot or Cold treatments | Conversation and therapeutic language |

*Used alone or in conjunction with pharmacologic interventions. Intervention based on age, developmental stage, setting and situation

## Other Interventions

- Lidocaine IV for migraine headaches and renal colic
- Acupuncture
- Trigger Point Injections

DISTRACTION TOOLKIT

**For more information on nonpharmacologic interventions or to download a distraction toolkit, visit . . .**

http://pami.emergency.med.jax.ufl.edu/resources/new-approaches-to-pain-course/

**or scan the QR code**

PANEL F

## Educational Pain Videos

Additional Therapies to help Manage Pain
https://goo.gl/Sd8siS

Preventing and Relieving Back Pain
https://goo.gl/DxLfYA

Ways to Manage Chronic Pain
https://goo.gl/KoVUFx

Pain Medication Safety
https://goo.gl/M9NCJh

Send your feedback on all PAMI materials and how you improved patient safety and clinical care to emresearch@jax.ufl.edu or 904-244-4986.
All PAMI materials are free access and adaptable to your individual institution.

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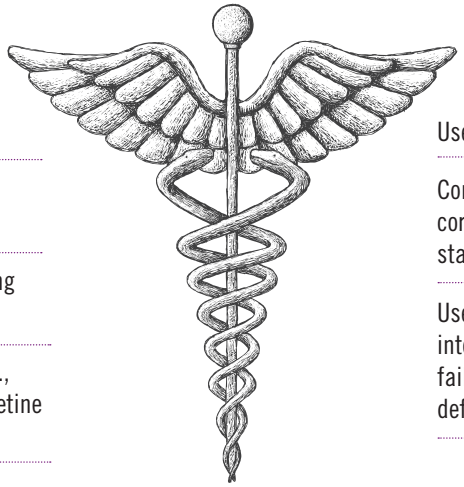
# NONOPIOID TREATMENTS FOR CHRONIC PAIN

## PRINCIPLES OF CHRONIC PAIN TREATMENT

Patients with pain should receive treatment that provides the greatest benefit. Opioids are not the first-line therapy for chronic pain outside of active cancer treatment, palliative care, and end-of-life care. Evidence suggests that nonopioid treatments, including nonopioid medications and nonpharmacological therapies can provide relief to those suffering from chronic pain, and are safer. Effective approaches to chronic pain should:



- Use nonopioid therapies to the extent possible
- Identify and address co-existing mental health conditions (e.g., depression, anxiety, PTSD)
- Focus on functional goals and improvement, engaging patients actively in their pain management
- Use disease-specific treatments when available (e.g., triptans for migraines, gabapentin/pregabalin/duloxetine for neuropathic pain)
- Use first-line medication options preferentially
- Consider interventional therapies (e.g., corticosteroid injections) in patients who fail standard non-invasive therapies
- Use multimodal approaches, including interdisciplinary rehabilitation for patients who have failed standard treatments, have severe functional deficits, or psychosocial risk factors

## NONOPIOID MEDICATIONS

| MEDICATION | MAGNITUDE OF BENEFITS | HARMS | COMMENTS |
|---|---|---|---|
| Acetaminophen | Small | Hepatotoxic, particularly at higher doses | First-line analgesic, probably less effective than NSAIDs |
| NSAIDs | Small-moderate | Cardiac, GI, renal | First-line analgesic, COX-2 selective NSAIDs less GI toxicity |
| Gabapentin/pregabalin | Small-moderate | Sedation, dizziness, ataxia | First-line agent for neuropathic pain; pregabalin approved for fibromyalgia |
| Tricyclic antidepressants and serotonin/norephinephrine reuptake inhibitors | Small-moderate | TCAs have anticholinergic and cardiac toxicities; SNRIs safer and better tolerated | First-line for neuropathic pain; TCAs and SNRIs for fibromyalgia, TCAs for headaches |
| Topical agents (lidocaine, capsaicin, NSAIDs) | Small-moderate | Capsaicin initial flare/ burning, irritation of mucus membranes | Consider as alternative first-line, thought to be safer than systemic medications. Lidocaine for neuropathic pain, topical NSAIDs for localized osteoarthritis, topical capsaicin for musculoskeletal and neuropathic pain |

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

LEARN MORE | www.cdc.gov/drugoverdose/prescribing/guideline.html

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# RECOMMENDED TREATMENTS FOR COMMON CHRONIC PAIN CONDITIONS

## Low back pain

**Self-care and education in all patients;** advise patients to remain active and limit bedrest

**Nonpharmacological treatments:** Exercise, cognitive behavioral therapy, interdisciplinary rehabilitation

**Medications**

- First-line: acetaminophen, non-steroidal anti inflammatory drugs (NSAIDs)
- Second-line: Serotonin and norepinephrine reuptake inhibitors (SNRIs)/tricyclic antidepressants (TCAs)

## Migraine

**Preventive treatments**

- Beta-blockers
- TCAs
- Antiseizure medications
- Calcium channel blockers
- Non-pharmacological treatments (Cognitive behavioral therapy, relaxation, biofeedback, exercise therapy)
- Avoid migraine triggers

**Acute treatments**

- Aspirin, acetaminophen, NSAIDs (may be combined with caffeine)
- Antinausea medication
- Triptans-migraine-specific

## Neuropathic pain

**Medications:** TCAs, SNRIs, gabapentin/pregabalin, topical lidocaine

## Osteoarthritis

**Nonpharmacological treatments:** Exercise, weight loss, patient education

**Medications**

- First-line: Acetamionphen, oral NSAIDs, topical NSAIDs
- Second-line: Intra-articular hyaluronic acid, capsaicin (limited number of intra-articular glucocorticoid injections if acetaminophen and NSAIDs insufficient)

## Fibromyalgia

**Patient education:** Address diagnosis, treatment, and the patient's role in treatment

**Nonpharmacological treatments:** Low-impact aerobic exercise (e.g., brisk walking, swimming, water aerobics, or bicycling), cognitive behavioral therapy, biofeedback, interdisciplinary rehabilitation

**Medications**

- FDA-approved: Pregabalin, duloxetine, milnacipran
- Other options: TCAs, gabapentin

# Non-opioid Medication Alternatives

## NON-OPIOID MEDICATIONS- Recommended by the CDC

| MEDICATION | MAGNITUDE OF BENEFITS | HARMS | COMMENTS |
|---|---|---|---|
| **Acetaminophen** | Small | Hepatotoxic, particularly at higher doses | First-line analgesic, probably less effective than NSAIDs |
| **NSAIDs** | Small-moderate | Cardiac, GI, renal | First-line analgesic, COX-2 selective NSAIDs less GI toxicity |
| **Gabapentin/ pregabalin** | Small-moderate | Sedation, dizziness, ataxia | First-line agent for neuropathic pain; pregabalin approved for fibromyalgia |
| **Tricyclic antidepressant and serotonin/ norepinephrine reuptake inhibitors** | Small-moderate | TCAs have anticholinergic and cardiac toxicities; SNRIs safer and better tolerated | First-line for neuropathic pain; TCAs and SNRIs for fibromyalgia, TCAs headaches |
| **Topical Agents ( lidocaine, capsaicin, NSAIDs)** | Small-moderate | Capsaicin initial flare/burning, irritation of mucus membranes | Consider as alternative first-line, thought to be safer than systemic medications. Lidocaine for neuropathic pain, topical NSAIDs for localized osteoarthritis, topical capsaicin for musculoskeletal and neuropathic pain |

***All medications above can be used alone or in combination with other compound ingredients. The magnitude of benefits could potentially be increased, and the harms may be reduced, when comparing topical vs. oral administration.***

## COMPOUNDED TOPICAL MEDICATIONS

**The combination of two or more ingredients prepared by a Pharmacist. Available by prescirption only.**

| COMPOUND INGREDIENTS | COMMENTS - MECHANISM OF ACTION |
|---|---|
| **Anesthetics**<br>Lidocaine, Prilocaine | A local anesthetic that exerts its actions by blocking nerve impulses thereby creating a numbing, pain relieving effect at the site of application |
| **NSAIDs**<br>Diclofenac, Ketoprofen, Celecoxib | A non-steroidal anti-inflammatory drug (NSAID) used to relieve pain, tenderness, swelling, and stiffness by decreasing inflammation |
| **Muscle Relaxers**<br>Cyclobenzaprine, Baclofen, Tizanidine | Variety of mechanisms to relieve muscle pain including; skeletal muscle relaxant approved for the relief/reduction of muscle spasms which reduces pain and tenderness and improves mobility |
| **Neuropathic Agents**<br>Gabapentin, Amitryptyline, Duloxetine | Variety of mechanisms to relieve many types of neuropathic pain including; diabetic neuropathy, fibromyalgia, and other neuropathies due to its effect on GABA or neurotransmitters |
| **+ Additional ingredients requested by prescriber** | Examples include: Dimethyl Sulfoxide (DMSO), Menthol, Capsaicin, etc |