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# Reframing Opioid Therapy: Buprenorphine's Role in Modern Pain Management

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## Disclosure

I do not have a vested interest in or affiliation with any corporate organization offering financial support or grant monies for this continuing education activity, or any affiliation with an organization whose philosophy could potentially bias my presentation (within the last 12 months).

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## Presentation Objectives

**Pharmacist:**
1. Outline the key features that make buprenorphine's pharmacology unique.
2. List evidence-based therapeutic uses of buprenorphine.
3. Evaluate the role of buprenorphine as a first-line opioid for chronic pain management.
4. Formulate an acute pain management plan for patients maintained on buprenorphine.

**Pharmacy Technician:**
1. Understand features that make buprenorphine's pharmacology unique.
2. List evidence-based therapeutic uses of buprenorphine.
3. Describe the role of buprenorphine as a first-line opioid for chronic pain management.
4. Identify an acute pain management plan for patients maintained on buprenorphine.

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## THE OPIOID CRISIS

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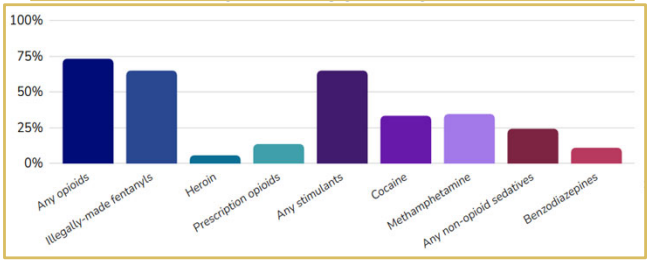
Overdose deaths involving select drugs and drug classes in 2024




Meldrum ML. A capsule history of pain management. JAMA. 2003;290(18):2470-2475. doi:10.1001/jama.290.18.2470
https://www.cdc.gov/overdose-prevention/data-research/facts-stats/sudors-dashboard-fatal-overdose-data Accessed March 2026

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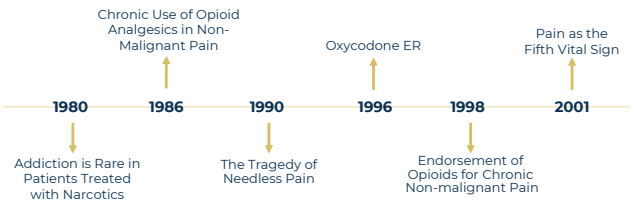
## ORIGINS




Porter J, Jick H. Addiction rare in patients treated with narcotics. N Engl J Med. 1980;302(2):123.
K. Portenoy and K. M. Foley Chronic use of opioid analgesics in non-malignant pain: Report of 38 cases. Pain 1986; 25: 171-186
Melzack R. The tragedy of needless pain. Sci Am. 1990 Feb;262(2):27-33

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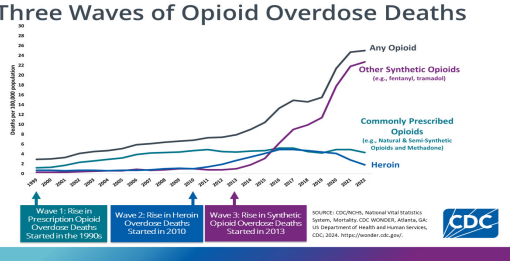
## WAVES

### Three Waves of Opioid Overdose Deaths




https://www.cdc.gov/overdose-prevention/about/understanding-the-opioid-overdose-epidemic.html Accessed March 2026

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## BUPRENORPHINE

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## WHY IT MATTERS TO PHARMACISTS & TECHNICIANS

- Buprenorphine's unique pharmacological profile
- Rising prevalence of opioid use disorder (OUD)
- Pharmacists' expanding role in medications for opioid use disorder (MOUD)
- Acute pain management challenges
- Stigma reduction and patient advocacy

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## MECHANISM OF ACTION

**Mu Receptor:** Partial Agonist

**Kappa Receptor:** Full Antagonist

**Delta Receptor:** Full Antagonist

**ORL-1 Receptor:** Partial Agonist

Gudin J, et al. (2020). A Unique Opioid for the Treatment of Chronic Pain. Pain Ther. 2020;9(1):41-54.

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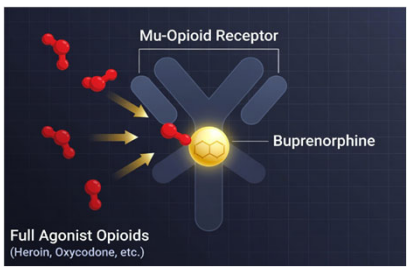
## RECEPTOR AFFINITY

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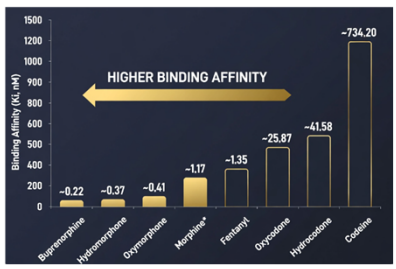
## BINDING AFFINITY




Volpe DA, McMahon Tobin GA, Mellon RD, et al. Uniform assessment and ranking of opioid μ receptor binding constants for selected opioid drugs. Regul Toxicol Pharmacol. 2011;59(3):385-390
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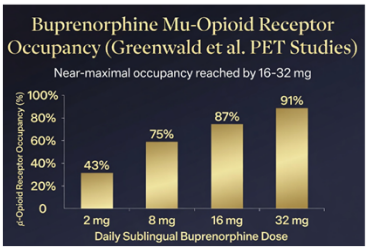
## MU-OPIOID RECEPTOR OCCUPANCY




Greenwald, M. K., Comer, S. D., & Fiellin, D. A. (2014). Buprenorphine maintenance and mu-opioid receptor availability in the treatment of opioid use disorder: Implications for clinical use and policy. Drug and Alcohol Dependence, 144, 1–11.
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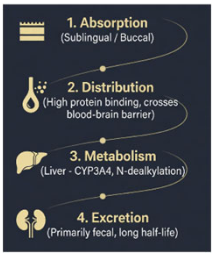
## BUPRENORPHINE: PHARMACOKINETICS




**Onset of Action:**
30 to 60 minutes

**Half Life:**
24 to 36 hours

**Steady State:**
3 - 7 days

**Pregnancy and Lactation:**
A treatment of choice for pregnant patients with opioid use disorder
Low concentrations enter breast milk, therefore acceptable to continue use while breastfeeding

Elkader A, Sproule B. Buprenorphine: clinical pharmacokinetics in the treatment of opioid dependence. Clin Pharmacokinet. 2005;44(7):661-680.
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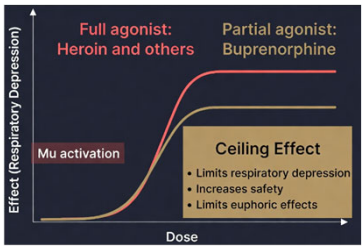
## CEILING EFFECT




Dahan A, Yassen A, Romberg R, et al. Buprenorphine induces ceiling in respiratory depression but not in analgesia. Br J Anaesth. 2006;96(5):627-632.
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## CONTRAINDICATIONS

- Paralytic ileus
- Significant respiratory depression
- Severe and acute bronchial asthma

Gold Standard, Inc. Buprenorphine. In: Clinical Pharmacology [database online]. Tampa, FL: Elsevier/Gold Standard;2026. Accessed March 31, 2026.

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## ADVERSE DRUG REACTIONS

| Adverse Reaction | Frequency |
|---|---|
| Nausea | Very common |
| Headache | Very common |
| Dizziness | Common |
| Somnolence/Drowsiness | Common |
| Vomiting | Common |
| Constipation | Common |
| Rash (Transdermal patch) | Common |
| Dry mouth | Uncommon |
| Respiratory Depression | Uncommon |
| QT prolongation | Not significant |
| Dental problems | Rare to uncommon |

Gold Standard, Inc. Buprenorphine. In: Clinical Pharmacology [database online]. Tampa, FL: Elsevier/Gold Standard;2026. Accessed March 31, 2026.
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## FDA-INDICATIONS

### Treatment of Opioid Use Disorder

- Moderate to severe opioid dependence
- Reduces cravings, withdrawal symptoms, illicit opioid use, and overdose risk
- Treatment should include counseling and psychosocial support

### Management of Acute and Chronic Pain

- Pain severe enough to require and opioid

Kumar R, Viswanath O, Saadabadi A. Buprenorphine. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2026 Jan-. [Updated 2024 Jun 8]. Accessed March 31, 2026.

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## OTHER USES

### Chronic pain in patients with OUD

- Lower risk of misuse compared to full opioid agonists
- Manage pain while treating OUD

### Acute pain management

- Sublingual formulation
- Increase frequency
- In combination with multimodal therapy

### Opioid withdrawal management

Kumar R, Viswanath O, Saadabadi A. Buprenorphine. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2026 Jan-. [Updated 2024 Jun 8]. Accessed March 31, 2026

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## BUPRENORPHINE: PRODUCTS

| Brand Name | Generic Name | Route | Indication | Formulation | Frequency |
|---|---|---|---|---|---|
| Butrans | Buprenorphine | Transdermal | Analgesia | Topical patch | Weekly |
| Belbuca | Buprenorphine | Transmucosal | Analgesia | Buccal film | Daily to Q12h |
| Buprenex | Buprenorphine | IV/IM | Analgesia | Solution for injection | Q6h prn |
| Suboxone | Buprenorphine/Naloxone | Sublingual | OUD | Film, Tablet | Daily to Q8h |
| Subutex | Buprenorphine | Sublingual | OUD | Tablet | Daily to Q8h |
| Zubsolv | Buprenorphine/Naloxone | Sublingual | OUD | Tablet | Daily to Q8h |
| Sublocade | Buprenorphine | Subcutaneous | OUD | ER solution for injection | Monthly |
| Brixadi | Buprenorphine | Subcutaneous | OUD | ER solution for injection | Weekly, Monthly |

Gold Standard, Inc. Buprenorphine. In: Clinical Pharmacology [database online]. Tampa, FL: Elsevier/Gold Standard;2026. Accessed March 31, 2026.

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## BUPRENORPHINE/NALOXONE

- Naloxone added to deter parenteral misuse
- Buprenorphine has a 10-fold greater binding affinity for the mu receptor
- T1/2 for naloxone in 30-40min vs Buprenorphine 24-60hrs
- Buprenorphine/Naloxone is misused
  - Injection
  - Snorting
- Combination may not be safer after discontinuation
- Naloxone may cause nausea, HA, anxiety

Blazes CK, Morrow JD. Reconsidering the Usefulness of Adding Naloxone to Buprenorphine. Front Psychiatry. 2020 Sep 11;11:549272.
Kelly E, Cumming C, Troeung L, Hulse G. Buprenorphine alone or with naloxone: Which is safer? J Psychopharmacol (2018) 32(5):544–52.

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## BUPRENORPHINE FOR PAIN MANAGEMENT

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## BUPRENORPHINE TRANSDERMAL & TRANSMUCOSAL

| PRODUCT | DOSING |
|---|---|
| Buprenorphine transdermal patch (Butrans®) | **OME < 30:** 5 mcg/hr patch<br>**OME 30-80**: 10 mcg/hr patch<br>**OME > 80**: use not recommended<br><br>Max Dose: 20 mcg/hr patch |
| Buprenorphine buccal film (Belbuca®) | **OME < 30:** 75 mcg transmucosally once or twice daily<br>**OME 30 - 89:** 150 mcg transmucosally twice daily<br>**OME 90 - 160:** 300 mcg transmucosally twice daily<br>**OME > 160**: use not recommended<br><br>Max Dose: 900 mcg twice daily |

OME=Oral morphine equivalent

Purdue Pharma L.P. (2021). Butrans® (buprenorphine) transdermal system, CIII [Package insert]. U.S. Food and Drug Administration
Indivior Pharmaceutical Inc. (2021). BELBUCA® (buprenorphine) buccal film, CIII [Package insert]. U.S. Food and Drug Administration

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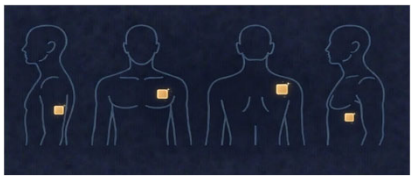
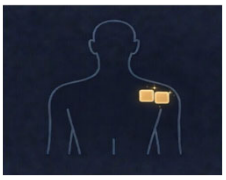
## BUPRENORPHINE TRANSDERMAL APPLICATION





- Apply to clean, dry, intact, relatively hairless skin
- Rotate sites with each new patch. Do not use the same site for at least 21 days
- Press firmly with the palm of your hand for 15 seconds. Do not rub
- Each patch is worn for 7 full days (change on the same day and time each week)
- Do not cut the patch

Purdue Pharma L.P. (2021). Butrans® (buprenorphine) transdermal system, CIII [Package insert]. U.S. Food and Drug Administration
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## BUPRENORPHINE TRANSDERMAL COUNSELING

- Avoid heat exposure (heating pads, hot baths, saunas, electric blankets, sunbathing, fever)
- Do not apply to broken, irritated, or recently shaved skin
- Avoid lotions, oils, or soap on the site before applying
- May take up to 72 hours to feel the full pain-relief effect
- If the patch falls off, apply a new one and note the new change day
- Report severe application site reactions (redness, swelling, rash, blisters).
- Avoid driving or operating (may cause drowsiness or dizziness)
- Store used patches safely and dispose of them properly (fold sticky sides together and flush or use disposal program)

Purdue Pharma L.P. (2021). Butrans® (buprenorphine) transdermal system, CIII [Package insert]. U.S. Food and Drug Administration
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## BUPRENORPHINE TRANSDERMAL PEARLS

- Transition from short acting opioid to the patch
  - OME 30-60 : Start at 10mcg patch and allow the same short acting opioid use for the first 3 days
- Nasal fluticasone sprayed under the patch may help with irritation/rash
- Works best in opioid naïve patients
- OME >60 Patch doesn't seem to work well
- Short acting opioids for breakthrough pain effective

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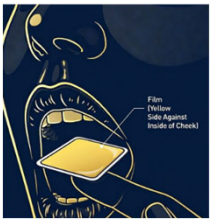
## BUPRENORPHINE BUCCAL APPLICATION

- Wet the inside of your cheek with your tongue or rinse your mouth with water.
- Remove the film and place it on your fingertip with the yellow side facing up.
- Press the yellow side firmly against the inside of your moistened cheek (left or right).
- Hold it in place with your finger for 5 seconds.
- You can use a second finger on the outside of your cheek for better positioning.
- Leave the film in place until it completely dissolves (usually within 30 minutes).
- Do not touch, move, chew, or swallow the film.
- You may talk and swallow saliva, but do not eat or drink anything until it is fully dissolved.




Collegium Pharmaceutical, Inc. (2023). BELBUCA® (buprenorphine) buccal film, CIII [Package insert]. U.S. Food and Drug Administration
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## BUPRENORPHINE BUCCAL COUNSELING

- Apply every 12 hours (twice daily), at the same times each day
- After the film dissolves: Rinse your mouth with water and swallow
- Wait at least 1 hour before brushing your teeth
- Do not apply to open sores, lesions, or irritated areas in the mouth
- If two films are used, apply the second film to the opposite cheek after the first one has been placed
- Avoid Eating or drinking until the film is completely dissolved

Collegium Pharmaceutical, Inc. (2023). BELBUCA® (buprenorphine) buccal film, CIII [Package insert]. U.S. Food and Drug Administration
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## BUPRENORPHINE BUCCAL PEARLS

- Gets to higher doses then the transdermal patch
- Copay assistance available
- Short acting opioids for breakthrough pain effective
- If not "working" ensure proper use

Collegium Pharmaceutical, Inc. (2023). BELBUCA® (buprenorphine) buccal film, CIII [Package insert]. U.S. Food and Drug Administration
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## BUPRENORPHINE DOSING EQUIVALENTS

- A 20 mcg/hour buprenorphine transdermal patch delivers approximately 0.48 mg of buprenorphine per day and is roughly equivalent to 1.5 – 2 mg per day of sublingual buprenorphine
- A 20 mcg/hour buprenorphine transdermal patch)is roughly equivalent to 150 mcg of buprenorphine buccal film every 12 hours (total 300 mcg per day)

Collegium Pharmaceutical, Inc. (2023). BELBUCA® (buprenorphine) buccal film, CIII [Package insert]. U.S. Food and Drug Administration
Purdue Pharma L.P. (2021). Butrans® (buprenorphine) transdermal system, CIII [Package insert]. U.S. Food and Drug Administration
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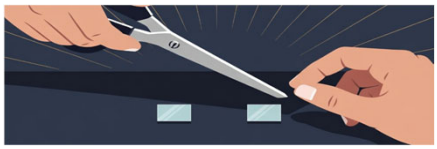
## SPLITING BUPRENORPHINE

- Package insert explicitly states that the film/tablets should not be cut.
  - Concern that the active ingredients may not be uniformly distributed throughout the film.
- Cutting films or tablets is common practice
- Reindel KL, et al. An Exploratory Study of Suboxone (Buprenorphine/Naloxone) Film Splitting: Cutting Methods, Content Uniformity, and Stability. J Am Pharm Assoc. 2019;59(4):548-554.
  - Content uniformity remained acceptable = ½ film had 50% of drug



Reindel KL, et al. An Exploratory Study of Suboxone (Buprenorphine/Naloxone) Film Splitting: Cutting Methods, Content Uniformity, and Stability. J Am Pharm Assoc. 2019;59(4):548-554.
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## BUPRENORPHINE/NALOXONE FOR CHRONIC PAIN MANAGEMENT

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## ACUTE PAIN IN PATIENTS USING SUBLINGUAL BUPRENORPHINE

**Mild to moderate pain**

- Continue usual buprenorphine dose
- May split it into q6–8h dosing for better analgesic coverage
- Non-pharmacologic: ice, elevation, positioning, relaxation techniques, splinting
- Optimize non-opioids
  - NSAIDs, gabapentinoids, APAP
- Consider temporarily increasing total daily buprenorphine
  - 24–32 mg/day in divided doses

Kohan L, et al. Buprenorphine management in the perioperative period: educational review and recommendations from a multisociety expert panel. Reg Anesth Pain Med. 2021;46(10):840-859
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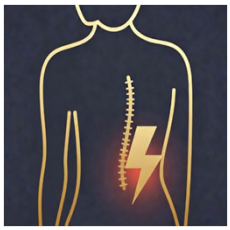
## ACUTE PAIN IN PATIENTS USING SUBLINGUAL BUPRENORPHINE

**Moderate to severe pain**

- Continue buprenorphine at the home dose
- May split it into q6–8h dosing for better analgesic coverage
- For high baseline doses (>16 mg/day)
  - Consider a temporary reduction to 8–16 mg/day
- Optimize non-opioids and multimodal
- Use full mu-opioids
  - High-affinity (hydromorphone, fentanyl)
  - Likely need higher doses



Kohan L, et al. Buprenorphine management in the perioperative period: educational review and recommendations from a multisociety expert panel. Reg Anesth Pain Med. 2021;46(10):840-859
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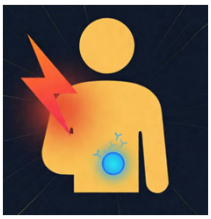
## ACUTE PAIN IN PATIENTS USING LONG-ACTING BUPRENORPHINE

**Moderate to severe pain**

- Continue buprenorphine
- Schedule elective surgery for end of dose or change to SL prior to surgery
- Optimize non-opioids and multimodal
- Use full mu-opioids
  - High-affinity (hydromorphone, fentanyl)
  - Likely need higher doses



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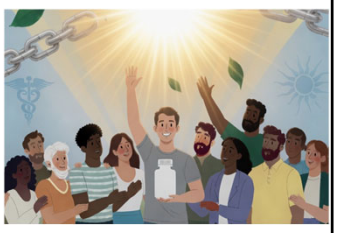
## STIGMA REDUCTION

- Buprenorphine is legitimate medicine for a chronic condition
- People on stable on buprenorphine can work, parent, and live fulling lives
- Common myth: Buprenorphine just replaces one addiction with another.
  - Buprenorphine helps stabilize brain chemistry safely
- People often develop OUD after an injury that led to prescribed opioids



Velander, Jenn Rer R. "Suboxone: Rationale, Science, Misconceptions." The Ochsner Journal, vol. 18, no. 1, Spring 2018, pp. 23-29. PMC
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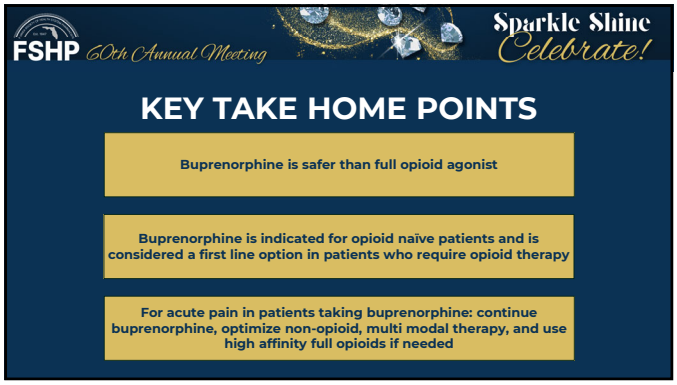
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KEY TAKE HOME POINTS
Buprenorphine is safer than full opioid agonist
Buprenorphine is indicated for opioid naïve patients and is considered a first line option in patients who require opioid therapy
For acute pain in patients taking buprenorphine: continue buprenorphine, optimize non-opioid, multi modal therapy, and use high affinity full opioids if needed

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Questions?

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Reframing Opioid Therapy: Buprenorphine's Role in Modern Pain Management
Joseph Cammilleri, Pharm.D., BCACP
joseph.cammilleri@ufhealth.org
Thank you!

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