

Buprenorphine for Chronic Pain

Buprenorphine is a partial agonist at mu opioid receptors and an antagonist at kappa and delta opioid receptors.²⁴ It is available in sublingual, buccal, transdermal, and parenteral formulations. Buprenorphine transdermal patch (*Butrans* [US], *BuTrans* [Canada]), *Belbuca* (a buccal film [US]), and injection (US) are approved for pain; other transmucosal formulations (with or without naloxone) are approved only for treatment of opioid use disorder. The FAQ below presents information about the use of buprenorphine for chronic noncancer pain.

Question	Answer/Pertinent Information
Is it legal to prescribe buprenorphine formulations approved for opioid use disorder for pain?	<ul style="list-style-type: none"> • In the US, although transmucosal formulations approved for opioid use disorder are not approved for pain control, they can be prescribed off-label for analgesia.^{1,6,11} <ul style="list-style-type: none"> ○ Buprenorphine is a Schedule III Controlled Substance.⁶ Prescribers with a DEA registration that permits them to prescribe Schedule III opioids can prescribe buprenorphine for pain.⁶ • Canada: check with your provincial licensing body for buprenorphine/naloxone (<i>Suboxone</i>) prescribing requirements.
What sublingual and buccal buprenorphine products are available?	<ul style="list-style-type: none"> • <i>Belbuca</i> (US) (buprenorphine buccal film) is approved for chronic pain.¹⁴ • For buprenorphine products approved for opioid use disorder, see our FAQ, <i>Management of Opioid Use Disorder</i>. These products can be used to treat chronic pain (e.g., in patients with opioid use disorder).⁹ When used to treat chronic pain, dosing two to four times daily is suggested (because the duration of action for analgesia is shorter than the duration of action for suppression of opioid withdrawal).^{6,29,33}
Are there important clinical differences among the various sublingual and buccal buprenorphine products?	<ul style="list-style-type: none"> • Products for opioid use disorder are dosed in mg; those for chronic pain are dosed in mcg. • There are differences in dose equivalencies among products due to differences in bioavailability, so don't automatically switch mg/mg. Dose equivalencies are outlined in our FAQ, <i>Management of Opioid Use Disorder</i>. • Some products contain naloxone to deter misuse. See section on abuse (below) for more information. • If a product other than <i>Belbuca</i> (US), <i>Butrans</i> (US), or <i>BuTrans</i> (Canada) will be used, experts advise use of the buprenorphine/naloxone product instead of the buprenorphine-only product to deter parenteral abuse. • Note that some patients will claim to be allergic to naloxone in an effort to get the buprenorphine-only product.

Question	Answer/Pertinent Information
How effective is buprenorphine for chronic noncancer pain?	<ul style="list-style-type: none">• Whether a maximum or ceiling dose of buprenorphine exists for pain is unclear, but some experts believe it does.^{8,17,18}• Transdermal or buccal buprenorphine (<i>Belbuca</i>) and full opioids seem to have similar efficacy (i.e., modest benefit) in short-term studies of chronic noncancer pain.^{3,5,24,30}• <i>Butrans</i> (buprenorphine transdermal patch) and <i>Belbuca</i> (buprenorphine buccal film) were statistically more effective than placebo or active control (<i>Butrans</i> 5 mcg/hr) for moderate-to-severe chronic low back pain in opioid-naive and opioid-experienced patients in four 12-week studies.^{4,14} However, other studies have not shown efficacy.^{4,14}<ul style="list-style-type: none">○ Among studies showing benefit, number needed to treat (NNT) for one patient to experience a clinically significant (i.e., 30%) reduction in pain vs placebo = 3 to 7.^{4,14}• There are insufficient data to assess the efficacy of sublingual buprenorphine for pain.^{2,8}<ul style="list-style-type: none">○ At least ten trials including over 1,000 patients have been published, but most were low quality.⁸○ For patients with poor pain control with other opioids, limited data suggest that switching to sublingual buprenorphine may improve control.^{1,11}
Why are buprenorphine sublingual, buccal, or transdermal products NOT a good choice for acute or as-needed use (e.g., for breakthrough pain)?	<ul style="list-style-type: none">• Transmucosal buprenorphine products approved for opioid use disorder are too strong for opioid-naive patients.<ul style="list-style-type: none">○ Buprenorphine is a potent opioid. Sublingual buprenorphine may be as much as 10 to 80 times more potent than oral morphine.^{11,19,33} There is no generally agreed upon dose equivalency between sublingual buprenorphine and morphine.³³○ Death has been reported in opioid-naive patients who received a buprenorphine 2 mg sublingual tablet for analgesia.¹⁰• With transmucosal buprenorphine, peak concentrations are delayed (30 minutes to 3.5 hours with single dose, 1 to 2 hours after multiple doses).^{7,14,19}• Median time to detectable buprenorphine concentrations is 17 hours after application of <i>Butrans</i> 10 mcg/hr patch.⁴• Buprenorphine has a relatively long duration of analgesia compared to short-acting opioids.^{8,19}• Nausea, vomiting, and dizziness may be problematic.⁷• Could precipitate opioid withdrawal if opioid history is unclear, or patient is untruthful about opioid use.
What about parenteral buprenorphine for acute pain?	<ul style="list-style-type: none">• Parenteral buprenorphine is usually administered intravenously (IV) or intramuscularly (IM).⁷• Parenteral buprenorphine is indicated for moderate to severe pain.⁷• Most data are based on one or two doses in postoperative patients. It appears at least as effective as morphine in this setting.⁷• Nausea, vomiting, and dizziness might be more common than with full opioids.⁷• It can precipitate withdrawal in opioid-dependent patients.¹²• The “ceiling” dose for analgesia or respiratory depression has not been determined.⁷ Buprenorphine 0.6 mg produces an increase in analgesia without an increase in respiratory depression.⁷

Question	Answer/Pertinent Information
What about the abuse potential of buprenorphine?	<ul style="list-style-type: none">• As a partial agonist, buprenorphine has a “ceiling effect,” meaning that as the dose increases, physiological and subjective effects, including euphoria, plateau.⁷ The ceiling may limit abuse potential.⁷• People misuse buprenorphine to curb opioid withdrawal (e.g., when they can’t get heroin, or in an attempt to “get clean” on their own), to self-medicate anxiety or depression, or to get high (less common).²⁵<ul style="list-style-type: none">○ Buying buprenorphine on the street may be cheaper than seeking drug treatment through legitimate channels.²⁵○ Because buprenorphine may precipitate withdrawal in people who use pure mu opioid agonists (e.g., oxycodone, heroin), people who use buprenorphine to get high are typically not regular users of other opioids.²⁶ However, some people who abuse pure mu opioids will switch to buprenorphine when they need to work or be social.²⁵• Some users snort or inject buprenorphine for a bigger, faster effect.¹⁵<ul style="list-style-type: none">○ Even buprenorphine products that contain naloxone can be abused. If buprenorphine/naloxone is misused by injection, naloxone may block the effects of buprenorphine, or precipitate opioid withdrawal in an opioid-dependent person.^{16,27} However, blockade may be moderate and brief relative to buprenorphine’s duration of action.¹⁶• Discourage misuse and diversion by limiting quantities and testing urine for buprenorphine and its metabolites.¹⁷<ul style="list-style-type: none">○ Keep in mind that buprenorphine does not show up on routine opiate screens.¹⁷ Let the lab know you are looking for it so that they can use the appropriate test.<ul style="list-style-type: none">▪ Keep in mind that a positive test does not rule out diversion because buprenorphine can still be detected for three to four days after use.^{17,28}○ Requests for early refills may be a sign of misuse or diversion.¹⁷ Also look for late refills; the patient may be using heroin on the weekends and buprenorphine during the week to temper withdrawal.
What about the safety of buprenorphine? <i>Continued...</i>	<ul style="list-style-type: none">• As a partial agonist, buprenorphine may have a wider safety margin than full agonists due to a “ceiling effect.”⁷ This means that as the dose increases, physiological and subjective effects, including respiratory depression, plateau.⁷• The risk for respiratory depression, even in overdose, might be less compared to that seen in patients taking full agonists.^{6,17} Clinically important respiratory depression is not common at usual doses.¹⁹ However, opioid-naïve patients or patients taking CNS depressants (e.g., alcohol, benzodiazepines, full opioid agonists) are at particular risk of respiratory depression.^{3,29}<ul style="list-style-type: none">○ If respiratory depression occurs in a patient receiving buprenorphine, a higher than usual dose of parenteral naloxone (e.g., naloxone 10 to 35 mg/70 kg person, or 5 to 12 mg [e.g., 2 mg every two to three minutes], to reverse doses within the therapeutic range) might be needed to reverse the effect of buprenorphine.^{7,20} This is because buprenorphine binds tightly to opioid receptors. Naloxone’s effect might also be delayed (30 to 60 minutes).⁷○ Continuous naloxone infusions may be needed. For example, give a 2 mg bolus over 90 seconds, then start 4 mg/hour. Continue until patient stable (usually <90 minutes). Monitor for respiratory depression for 24 hours.¹⁹• Buprenorphine may cause less constipation than full mu receptor agonists.²⁴

Question	Answer/Pertinent Information
Safety, continued	<ul style="list-style-type: none">• Buprenorphine dissociates slowly from its receptors, which may attenuate withdrawal between doses or when it is discontinued, due to long duration of action and “self-tapering” effect.^{6,17}• Buprenorphine may cause fewer hormonal effects (i.e., suppression of gonadotropin production and sexual dysfunction) than full agonists.¹³
For whom might sublingual, buccal, or transdermal buprenorphine be a good analgesic choice ?	<ul style="list-style-type: none">• Consider buprenorphine as a first-line alternative to a full opioids or tramadol for chronic pain.³⁰• Consider switching to buprenorphine in patients taking full opioid agonists to reduce the risk of overdose or misuse,^{3,29,33} especially if the patient:<ul style="list-style-type: none">○ can’t taper and discontinue their high-dose opioid (e.g., not a candidate for an NSAID; opioid withdrawal is intolerable).^{3,29,33}○ is at particular risk of overdose (e.g., patient uses alcohol or benzodiazepines, patients has sleep apnea).³³• There is not a lot of evidence to support buprenorphine for analgesia in opioid-naive patients (especially sublingual formulations designed for opioid use disorder), or for patients taking low, intermittent doses of full mu-opioid agonists.³<ul style="list-style-type: none">○ Only <i>Butrans</i> (US) or <i>BuTrans</i> (Canada) transdermal patch and <i>Belbuca</i> (US) buccal film are approved for use in opioid-naive patients.^{4,14,23}• <i>Butrans</i> (US), <i>BuTrans</i> (Canada), and <i>Belbuca</i> (US) are indicated as alternatives to around-the-clock opioid treatment in patients in whom non-opioids or full opioids are not tolerated, are ineffective, or are not expected to provide adequate analgesia.^{4,14,23}
What needs to be considered when switching from a full opioid to buprenorphine ?	<ul style="list-style-type: none">• Note that conversion poses risk of precipitating opioid withdrawal.• Switching from methadone to buprenorphine requires special caution and close monitoring because of methadone’s long half-life and variable potency ratio.
How do you switch from a full opioid to a buprenorphine transdermal patch (<i>Butrans</i> [US], <i>BuTrans</i> [Canada])? <i>Continued...</i>	<ul style="list-style-type: none">• Patients may need short-acting analgesics for breakthrough pain.⁴ (See section below on breakthrough analgesia).• If a patient requires >80 mg oral morphine or equivalent daily, consider an alternate opioid; transdermal buprenorphine may not provide adequate analgesia.⁴ <p>US</p> <ul style="list-style-type: none">• Switching to <i>Butrans</i> from oral morphine <30 mg daily or equivalent, or for opioid-naive patients:⁴<ul style="list-style-type: none">○ Start <i>Butrans</i> 5 mcg/hour weekly patch at the next dosing interval.• Switching to <i>Butrans</i> from oral morphine 30 to 80 mg daily or equivalent:⁴<ul style="list-style-type: none">○ Taper patient’s opioid (this may take up to seven days) to not more than morphine 30 mg or equivalent daily. (Also see footnote b).

Question	Answer/Pertinent Information
Switching from full opioid to transdermal patch, continued	<ul style="list-style-type: none">○ Start <i>Butrans</i> 10 mcg/hour weekly patch at the next dosing interval. <p>Canada:</p> <ul style="list-style-type: none">● For opioid-naive patients, start <i>BuTrans</i> 5 mcg/hour weekly patch.²³● For patients already taking an opioid (up to 80 mg daily oral morphine or equivalent), start <i>BuTrans</i> 5 to 10 mcg/hour weekly patch.²³
How do you switch from a full opioid to a buprenorphine buccal film (<i>Belbuca</i> [US])?	<ul style="list-style-type: none">● Switching to <i>Belbuca</i> from oral morphine <30 mg daily or equivalent, or for opioid-naive patients:¹⁴<ul style="list-style-type: none">○ Start <i>Belbuca</i> 75 mcg once daily or every 12 hours.● Switching to <i>Belbuca</i> from oral morphine 30 to 89 mg daily or equivalent:¹⁴<ul style="list-style-type: none">○ Taper patient’s opioid to not more than morphine 30 mg or equivalent daily. (Also see footnote a.)○ Start <i>Belbuca</i> 150 mcg every 12 hours.○ Patients may need short-acting analgesics for breakthrough pain. (See section below on breakthrough pain).● Switching to <i>Belbuca</i> from oral morphine 90 to 160 mg daily or equivalent:¹⁴<ul style="list-style-type: none">○ Taper patient’s opioid to not more than morphine 30 mg or equivalent daily. (Also see footnote a.)○ Start <i>Belbuca</i> 300 mcg every 12 hours.○ Patients may need short-acting analgesics for breakthrough pain. (See section below on breakthrough analgesia).● If a patient requires >160 mg oral morphine or equivalent daily, consider an alternate opioid; <i>Belbuca</i> may not provide adequate analgesia.¹⁴
How do you switch from a full opioid to buprenorphine sublingual tablets for pain?	<p>Buprenorphine sublingual tablets with or without naloxone (off-label use; data limited; not for patients taking <160 mg of oral morphine equivalent daily).^{1,33}</p> <ul style="list-style-type: none">● May not be appropriate for patient taking >200 mg of oral morphine equivalent daily, >80 mg of methadone daily, or transdermal fentanyl >25 mcg/hr.¹● Start buprenorphine at least 12 to 24 hours after the last dose of a short-acting opioid and at least 24 to 48 hours after the last dose of a long-acting opioid (48 to 72 hours for methadone).^{8,11}● Keep in mind buprenorphine is a potent opioid. Sublingual buprenorphine may be 10 to 80 times more potent than oral morphine, but there is no generally agreed-upon dose equivalency between morphine and sublingual buprenorphine.^{11,19,33}● Chronic pain patients with continued or worsening pain despite opioids have been started on 2 to 8 mg (generic <i>Suboxone</i> sublingual tablet), with additional 2 to 8 mg doses at 1 to 2-hour intervals for pain or withdrawal.^{1,11} In one protocol, buprenorphine was started when mild withdrawal symptoms started to occur, to reduce the risk of precipitating withdrawal.¹ The first few doses were given in the office, until withdrawal symptoms and pain were tolerable, and stable or improving.¹ Home dosing was based on the dose needed to control withdrawal and pain.¹● Max total daily dose (generic <i>Suboxone</i> sublingual tab) has ranged from 32 mg (e.g., 8 mg four times daily) to 8 mg three times daily plus up to four “as needed” doses of 2 to 4 mg every four hours.¹ (Anecdotally, some prescribers report that 8 mg twice daily is the maximum dose they see for pain.)

Question	Answer/Pertinent Information
What can be used for breakthrough analgesia in patients taking buprenorphine?	<ul style="list-style-type: none">• Non-opioids when possible.¹⁷• Tramadol.³¹• Short-acting opioids (high doses may be needed, depending on the dose of buprenorphine used).^{17,19,24}<ul style="list-style-type: none">○ Note that Canadian <i>BuTrans</i> labeling recommends against using fentanyl products for breakthrough pain.²³• If additional analgesics are needed, consider whether a dosage increase of buprenorphine is needed.^{4,14,23}<ul style="list-style-type: none">○ The minimum titration interval for <i>Belbuca</i> is four days.¹⁴○ The minimum titration interval for <i>Butrans</i> and <i>BuTrans</i> is 72 hours.^{4,23}• If buprenorphine needs to be discontinued (e.g., to facilitate management of severe pain with full opioids), monitor for sedation and respiratory depression while buprenorphine’s partial agonist effect lessens.²⁹
How do you manage acute or perioperative pain in hospitalized patients taking buprenorphine for chronic pain?	<ul style="list-style-type: none">• Buprenorphine can be continued.²²• For mild-to-moderate pain, approaches include:<ul style="list-style-type: none">○ acetaminophen and an NSAID (if appropriate).^{22,32}○ continuing buprenorphine and supplementing with additional parenteral buprenorphine, or if the patient is taking a sublingual formulation, divide the maintenance dose every six to eight hours, possibly titrating up to a maximum total daily dose of 32 mg (of sublingual <i>Suboxone</i> or equivalent).²²• For more severe pain, approaches include:<ul style="list-style-type: none">○ non-opioid options (e.g., local or regional anesthesia, ketamine, IV lidocaine).^{21,22,32}○ short-acting, full opioid agonists (morphine, fentanyl, or hydromorphone are suggested).^{17,21,22} High doses may be needed (especially if the patient is taking a sublingual formulation not approved for chronic pain), posing risks of respiratory depression and sedation.^{21,24}○ converting to a short-acting full agonist.^{21,22} High doses may be needed.²¹<ul style="list-style-type: none">▪ Gradually taper to the lowest daily dose (e.g., 2 mg of sublingual <i>Suboxone</i>) and completely discontinue 72 hours before surgery (i.e., suggested goal is for patient to be buprenorphine-free for 72 hours pre-op).²²▪ Buprenorphine transdermal patches can be discontinued 12 hours pre-op.²²▪ If the case is urgent (i.e., no time for a washout), and the patient is expected to have significant post-op pain, stop the buprenorphine and consult the acute pain service.²² The patient will likely initially need high doses of short-acting opioids or patient-controlled analgesia, and intensive care admission for respiratory monitoring.²²

a. Switching from oral morphine ≥ 30 mg or equivalent daily to buccal film (*Belbuca*): as an alternative to the approach described in the product labeling, consider switching directly from the opioid to buprenorphine with clonidine to treat withdrawal symptoms [Evidence Level B-3].⁵ Start buprenorphine the morning after the last opioid dose.⁵ If the patient is taking oral morphine > 150 mg or equivalent daily, consider reducing the dose by 30% to 50% over four to six weeks before switching.⁵

- b. Switching from oral morphine ≥ 30 mg or equivalent daily to buprenorphine transdermal patch: as an alternative to the approach described in the product labeling, consider switching directly from the opioid to buprenorphine with clonidine to treat withdrawal symptoms [Evidence Level C].²⁴ Start the patch the morning after the last opioid dose.²⁴ If the patient is taking oral morphine >90 mg or equivalent daily, consider starting with the 20 mcg/hour weekly patch.²⁴

Users of this resource are cautioned to use their own professional judgment and consult any other necessary or appropriate sources prior to making clinical judgments based on the content of this document. Our editors have researched the information with input from experts, government agencies, and national organizations. Information and internet links in this article were current as of the date of publication.

Levels of Evidence

In accordance with our goal of providing Evidence-Based information, we are citing the **LEVEL OF EVIDENCE** for the clinical recommendations we publish.

Level	Definition	Study Quality
A	Good-quality patient-oriented evidence.*	<ol style="list-style-type: none"> 1. High-quality randomized controlled trial (RCT) 2. Systematic review (SR)/Meta-analysis of RCTs with consistent findings 3. All-or-none study
B	Inconsistent or limited-quality patient-oriented evidence.*	<ol style="list-style-type: none"> 1. Lower-quality RCT 2. SR/Meta-analysis with low-quality clinical trials or of studies with inconsistent findings 3. Cohort study 4. Case control study
C	Consensus; usual practice; expert opinion; disease-oriented evidence (e.g., physiologic or surrogate endpoints); case series for studies of diagnosis, treatment, prevention, or screening.	

***Outcomes that matter to patients** (e.g., morbidity, mortality, symptom improvement, quality of life).

[Adapted from Ebell MH, Siwek J, Weiss BD, et al. Strength of recommendation taxonomy (SORT): a patient-centered approach to grading evidence in the medical literature. *Am Fam Physician*. 2004 Feb 1;69(3):548-56.

<https://www.aafp.org/pubs/afp/issues/2004/0201/p548.html>.]

References

1. Rosenblum A, Cruciani RA, Strain EC, et al. Sublingual buprenorphine/naloxone for chronic pain in at-risk patients: development and pilot test of a clinical protocol. *J Opioid Manag*. 2012 Nov-Dec;8(6):369-82.
2. Aiyer R, Gulati A, Gungor S, et al. Treatment of Chronic Pain With Various Buprenorphine Formulations: A Systematic Review of Clinical Studies. *Anesth Analg*. 2018 Aug;127(2):529-538.
3. Department of Veterans Affairs/Department of Defense. VA/DoD clinical practice guideline for the use of opioids in the management of chronic pain. Version 4.0-2022. <https://www.healthquality.va.gov/guidelines/Pain/cot/VADoDOpioidsCPG.pdf>. (Accessed March 9, 2023).
4. Product information for Butrans. Purdue Pharma. Stamford, CT 06901. June 2022.
5. Zimmerman A, Bikhdash R, Rauck R. Conversion of Schedule II Opioids to Buprenorphine Buccal Film: A Retrospective Analysis. *Pain Med*. 2021 May 21;22(5):1109-1115.
6. Heit HA, Gourlay DL. Buprenorphine: new tricks with an old molecule for pain management. *Clin J Pain*. 2008 Feb;24(2):93-7. Erratum in: *Clin J Pain*. 2008 May;24(4):370.
7. Johnson RE, Fudala PJ, Payne R. Buprenorphine: considerations for pain management. *J Pain Symptom Manage*. 2005 Mar;29(3):297-326.
8. Cote J, Montgomery L. Sublingual buprenorphine as an analgesic in chronic pain: a systematic review. *Pain Med*. 2014 Jul;15(7):1171-8.
9. Lazaridou A, Paschali M, Edwards RR, Gilligan C. Is Buprenorphine Effective for Chronic Pain? A Systematic Review and Meta-analysis. *Pain Med*. 2020 Dec 25;21(12):3691-3699.
10. Product information for Suboxone film. Indivior. North Chesterfield, VA 23235. June 2022.
11. Daitch J, Frey ME, Silver D, et al. Conversion of chronic pain patients from full-opioid agonists to sublingual buprenorphine. *Pain Physician*. 2012 Jul;15(3 Suppl):ES59-66.
12. Product information for buprenorphine injection. Hospira. Lake Forest IL 60045. October 2022.
13. Reddy RG, Aung T, Karavitaki N, Wass JA. Opioid induced hypogonadism. *BMJ*. 2010 Aug 31;341:c4462.
14. Product information for Belbuca. BioDelivery Sciences International. Raleigh, NC 27612. June 2022.
15. Middleton LS, Nuzzo PA, Lofwall MR, et al. The pharmacodynamic and pharmacokinetic profile of intranasal crushed buprenorphine and buprenorphine/naloxone tablets in opioid abusers. *Addiction*. 2011 Aug;106(8):1460-73.
16. Sansone RA, Sansone LA. Buprenorphine treatment for narcotic addiction: not without risks. *Innov Clin Neurosci*. 2015 Mar-Apr;12(3-4):32-6.
17. Substance Abuse and Mental Health Services Administration. Medications for opioid use disorder. Treatment Improvement Protocol (TIP) series 63. Publication No. PEP21-02-01-002. Rockville, MD: Substance Abuse and Mental Health Services Administration, July 2021. <https://store.samhsa.gov/sites/default/files/pep21-02-01-002.pdf>. (Accessed February 3, 2023).
18. Dahan A, Yassen A, Romberg R, et al. Buprenorphine induces ceiling in respiratory depression but not in analgesia. *Br J Anaesth*. 2006 May;96(5):627-32.
19. Foster B, Twycross R, Mihalyo M, Wilcock A. Buprenorphine. *J Pain Symptom Manage*. 2013 May;45(5):939-49.
20. Clinical Pharmacology powered by Clinical Key. Tampa (FL): Elsevier. 2023. <http://www.clinicalkey.com>. (Accessed March 9, 2023).
21. Chern SY, Isserman R, Chen L, et al. Perioperative Pain Management for Patients on Chronic Buprenorphine: A Case Report. *J Anesth Clin Res*. 2013 Oct 30;3(250):1000250.
22. Jonan AB, Kaye AD, Urman RD. Buprenorphine Formulations: Clinical Best Practice Strategies Recommendations for Perioperative Management of Patients Undergoing Surgical or Interventional Pain Procedures. *Pain Physician*. 2018 Jan;21(1):E1-E12.
23. Product monograph for BuTrans. Purdue Pharma. Pickering, ON L1W 3W8. August 2020.

24. Webster L, Gudín J, Raffa RB, et al. Understanding Buprenorphine for Use in Chronic Pain: Expert Opinion. *Pain Med.* 2020 Apr 1;21(4):714-723.
25. Chilcoat HD, Amick HR, Sherwood MR, Dunn KE. Buprenorphine in the United States: Motives for abuse, misuse, and diversion. *J Subst Abuse Treat.* 2019 Sep;104:148-157.
26. Wish ED, Artigiani E, Billing A, et al. The emerging buprenorphine epidemic in the United States. *J Addict Dis.* 2012;31(1):3-7.
27. Soyka M. New developments in the management of opioid dependence: focus on sublingual buprenorphine-naloxone. *Subst Abuse Rehabil.* 2015 Jan 6;6:1-14.
28. Lofwall MR, Walsh SL. A review of buprenorphine diversion and misuse: the current evidence base and experiences from around the world. *J Addict Med.* 2014 Sep-Oct;8(5):315-26.
29. Dowell D, Ragan KR, Jones CM, et al. CDC Clinical Practice Guideline for Prescribing Opioids for Pain - United States, 2022. *MMWR Recomm Rep.* 2022 Nov 4;71(3):1-95.
30. Hale M, Gimbel J, Rauck R. Buprenorphine buccal film for chronic pain management. *Pain Manag.* 2020 Jul;10(4):213-223.
31. Kusnik S, Likar R, Sittl R. Transdermal buprenorphine in chronic pain: indications and clinical experience. *Expert Rev Clin Pharmacol.* 2008 Nov;1(6):729-36.
32. Clinical Resource, Enhanced Recovery After Surgery: Developing an ERAS Protocol. *Pharmacist's Letter/Pharmacy Technician's Letter.* February 2023. [390218].
33. Department of Veterans Affairs/Department of Defense. VA/DoD Buprenorphine formulations for chronic pain management in patients with opioid use disorder or on long-term opioid therapy with physiologic tolerance. October 2022. https://www.va.gov/formularyadvisor/DOC_PDF/CRE_Buprenorphine_Formulations_for_Pain_Management_RFU_Rev_Oct_2022.pdf. (Accessed March 17, 2023).

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