



HIGHLIGHTS OF PRESCRIBING INFORMATION

These highlights do not include all the information needed to use BUPRENORPHINE AND NALOXONE SUBLINGUAL FILM safely and effectively. See full prescribing information for BUPRENORPHINE AND NALOXONE SUBLINGUAL FILM. **BUPRENORPHINE AND NALOXONE sublingual film**, for sublingual or buccal use. **CII**. Initial U.S. Approval: 2002

— **RECENT MAJOR CHANGES** — Dosage and Administration (2.2, 2.3, 2.5, 2.8) Warnings and Precautions (5.2, 5.3) 09/17/2018

— **INDICATIONS AND USAGE** — Buprenorphine and naloxone sublingual film contains buprenorphine, a partial-opioid agonist and naloxone, an opioid antagonist, and is indicated for treatment of opioid dependence. (1) Buprenorphine and naloxone sublingual film should be used as part of a complete treatment plan that includes counseling and psychosocial support. (1)

— **DOSAGE AND ADMINISTRATION** — Prescription use of this product is limited under the Drug Addiction Treatment Act (2,1). Administer buprenorphine and naloxone sublingual film as a single daily dose. (2,2) To avoid precipitating withdrawal, induction with buprenorphine and naloxone sublingual film should be undertaken when objective and clear signs of withdrawal are evident and buprenorphine and naloxone sublingual film should be administered in divided doses when used as initial treatment. (2,3)

For patients dependent on short-acting opioid products who are in opioid withdrawal, on Day 1, administer up to 8 mg/2 mg buprenorphine and naloxone sublingual film (in divided doses). On Day 2, administer up to 16 mg/4 mg buprenorphine and naloxone sublingual film as a single dose. (2,3) For patients dependent on methadone or long-acting opioid products, induction onto sublingual buprenorphine monotherapy is recommended on Days 1 and 2 of treatment. (2,3) For maintenance treatment, the target dosage of buprenorphine and naloxone sublingual film is usually 16 mg/4 mg as a single daily dose. (2,4)

— **CONTRAINDICATIONS** — Hypersensitivity to buprenorphine or naloxone. (4)

— **WARNINGS AND PRECAUTIONS** — **Addiction, Abuse, and Misuse:** Buprenorphine can be abused in a similar manner to other opioids. Monitor patients for conditions indicative of diversion or progression of opioid dependence and addictive behaviors. Multiple refills should not be prescribed early in treatment or without appropriate patient follow-up visits. (5,1)

— **Risk of Respiratory Depression:** Life-threatening respiratory depression and death have occurred in association with buprenorphine use.

— **Use in Specific Populations:** Lactation: Buprenorphine passes into mother's milk. (8,2)

— **Geriatric Patients:** Monitor for sedation and respiratory depression. (8,5)

— **Moderate or Severe Hepatic Impairment:** Buprenorphine/naloxone products are not recommended in patients with severe hepatic impairment and may not be appropriate for patients with moderate hepatic impairment. (8,6)

— **Switching Between Buprenorphine or Buprenorphine and Naloxone Sublingual Tablets and Naloxone Sublingual Film:** 2.10 Switching Between Buprenorphine and Naloxone Sublingual Film Strengths

2.11 Switching Between Sublingual and Buccal Sites of Administration

3.1 Important Dosage and Administration Information

3.2 Induction

FULL PRESCRIBING INFORMATION

1 **INDICATIONS AND USAGE** Buprenorphine and naloxone sublingual film is indicated for treatment of opioid dependence. Buprenorphine and naloxone sublingual film should be used as part of a complete treatment plan that includes counseling and psychosocial support.

2 **DOSAGE AND ADMINISTRATION**
2.1 **Drug Addiction Treatment Act** Under the Drug Addiction Treatment Act (DATA) (U.S.C. 823(g)), prescription use of this product in the treatment of opioid dependence is limited to healthcare providers who meet certain qualifying requirements, and who have notified the Secretary of Health and Human Services (HHS) of their intent to prescribe this product for the treatment of opioid dependence and have been assigned a unique identification number that must be included on every prescription.
2.2 **Important Dosage and Administration Information** Buprenorphine and naloxone sublingual film is administered sublingually or buccally as a single daily dose. Medication should be prescribed in consideration of the frequency of visits. Provision of multiple refills is not advised early in treatment or without appropriate patient follow-up visits.
2.3 **Induction:** Prior to induction, consideration should be given to the type of opioid dependence (i.e., long- or short-acting opioid products), the time since last opioid use, and the degree or level of opioid dependence.
2.4 **Patients dependent on heroin or other short-acting opioid products:** Patients dependent on heroin or other short-acting opioid products may be induced with either buprenorphine and naloxone sublingual film or with sublingual buprenorphine monotherapy. At treatment initiation, the first dose of buprenorphine and naloxone sublingual film should be administered when objective signs of moderate opioid withdrawal appear, not less than six hours after the patient last used opioids.
2.5 **It is recommended that an adequate treatment dose, titrated to clinical effectiveness, be achieved as rapidly as possible. In some studies, a two-grain induction over several days led to a high rate of drop-out of buprenorphine patients during the induction period.**
On Day 1, an induction dosage of up to 8 mg/2 mg buprenorphine and naloxone sublingual film is recommended. Clinicians should start with an initial dose of 2 mg/0.5 mg or 4 mg/1 mg buprenorphine/naloxone and titrate upwards in 2 or 4 mg increments of buprenorphine, as appropriate, until the patient is comfortable with a 16 mg/4 mg buprenorphine/naloxone based on the control of acute withdrawal symptoms.
On Day 2, a single daily dose of up to 16 mg/4 mg buprenorphine and naloxone sublingual film is recommended.

Because the exposure to naloxone is somewhat higher after buccal than after sublingual administration, it is recommended that the sublingual site of administration be used during induction to minimize exposure to naloxone, to reduce the risk of precipitated withdrawal. Patients dependent on methadone or long-acting opioid products may be more susceptible to precipitated and prolonged withdrawal during induction than those on short-acting opioid products.
Buprenorphine/naloxone combination products have not been evaluated in adequate and well-controlled studies for induction in patients who are physically dependent on long-acting opioid products, and the naloxone in these combination products is absorbed in small amounts by the sublingual route and could cause worse precipitated and prolonged withdrawal. For this reason, buprenorphine monotherapy is recommended in patients taking long-acting opioids when used according to approved administration instructions. Following induction, the patient may then be transitioned to once-daily buprenorphine and naloxone sublingual film.
2.6 **Maintenance:** For maintenance, buprenorphine and naloxone sublingual film may be administered buccally or sublingually. The dosage of buprenorphine and naloxone sublingual film from Day 3 onwards should be progressively adjusted in increments/decrements of 2 mg/0.5 mg or 4 mg/1 mg buprenorphine/naloxone to a level that maintains the patient in treatment and suppresses opioid withdrawal signs and symptoms.
After treatment induction and stabilization, the maintenance dose of buprenorphine and naloxone sublingual film is generally in the range of 4 mg/1 mg buprenorphine/naloxone to 16 mg/4 mg buprenorphine/naloxone per day depending on the individual patient and clinical response. The recommended target dosage of buprenorphine and naloxone sublingual film during maintenance is 16 mg/4 mg buprenorphine/naloxone/day as a single daily dose. Doses higher than 24 mg/6 mg daily have not been demonstrated to provide a clinical advantage.

When determining the prescription quantity for unsupervised administration, consider the patient's level of stability, the security of his or her home situation, and other factors likely to affect the ability to maintain supplies of take-home medication.
There is no maximum recommended duration of maintenance treatment. Patients may require treatment indefinitely and should continue for as long as patients are benefiting and the use of buprenorphine and naloxone sublingual film contributes to the intended treatment goals.
2.8 **Method of Administration** Buprenorphine and naloxone sublingual film must be administered whole. Do not cut, chew, or swallow buprenorphine and naloxone sublingual film. Advise patients not to eat or drink anything until the film is completely dissolved.
Sublingual Administration Place one film under the tongue, close to the base on the left or right side. If an additional film is necessary to achieve the prescribed dose, place an additional film sublingually on the opposite side from the first film. Place the film in a manner to minimize overlapping as much as possible. The film must be kept under the tongue until the film is completely dissolved. If a third film is necessary to achieve the prescribed dose, place it under the tongue on the other side after the first two films have dissolved.
Buccal Administration Place one film on the inside of the right or left cheek. If an additional film is necessary to achieve the prescribed dose, place an additional film on the inside of the opposite cheek. The film must be kept on the inside of the cheek until the film is completely dissolved. If a third film is necessary to achieve the prescribed dose, place it on the inside of the right or left cheek after the first two films have dissolved.

2.9 **Switching Between Buprenorphine or Buprenorphine and Naloxone Sublingual Tablets and Naloxone Sublingual Film:** 2.10 Switching Between Buprenorphine and Naloxone Sublingual Film Strengths

2.11 Switching Between Sublingual and Buccal Sites of Administration

3.1 Important Dosage and Administration Information

3.2 Induction

3.3 Important Dosage and Administration Information

3.4 Important Dosage and Administration Information

3.5 Important Dosage and Administration Information

3.6 Important Dosage and Administration Information

3.7 Important Dosage and Administration Information

ADVERSE REACTIONS

Most common adverse events reported with buprenorphine and naloxone sublingual film include: headache, dizziness, constipation, and dry mouth. Other adverse events include: nausea, vomiting, hyperhidrosis, and sedation. In clinical trials, buprenorphine and naloxone sublingual film was generally well tolerated. In clinical trials, buprenorphine and naloxone sublingual film was generally well tolerated. In clinical trials, buprenorphine and naloxone sublingual film was generally well tolerated.

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3.11 Important Dosage and Administration Information

3.12 Important Dosage and Administration Information

CLINICAL PHARMACOLOGY

1 **MECHANISM OF ACTION** Buprenorphine is a partial-opioid agonist and naloxone is an opioid antagonist. Buprenorphine and naloxone sublingual film is administered sublingually or buccally as a single daily dose. Medication should be prescribed in consideration of the frequency of visits. Provision of multiple refills is not advised early in treatment or without appropriate patient follow-up visits.
2 **PHARMACODYNAMICS** Buprenorphine and naloxone sublingual film is administered sublingually or buccally as a single daily dose. Medication should be prescribed in consideration of the frequency of visits. Provision of multiple refills is not advised early in treatment or without appropriate patient follow-up visits.
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HOW SUPPLIED / STORAGE AND HANDLING

1 **HOW SUPPLIED / STORAGE AND HANDLING** Buprenorphine and naloxone sublingual film is available in 4 mg/1 mg and 12 mg/3 mg strengths. Medication should be prescribed in consideration of the frequency of visits. Provision of multiple refills is not advised early in treatment or without appropriate patient follow-up visits.
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CONTRAINDICATIONS

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WARNINGS AND PRECAUTIONS

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12 **ADDICTION, ABUSE, AND MISUSE** Buprenorphine and naloxone sublingual film is available in 4 mg/1 mg and 12 mg/3 mg strengths. Medication should be prescribed in consideration of the frequency of visits. Provision of multiple refills is not advised early in treatment or without appropriate patient follow-up visits.

13 **RISK OF RESPIRATORY AND CENTRAL NERVOUS SYSTEM (CNS) DEPRESSION** Buprenorphine and naloxone sublingual film is available

the other film on the inside of the opposite cheek. Keep the films in place until they have completely dissolved.

- If your doctor tells you to take a third film, place it on the inside of your right or left cheek after the first 2 films have dissolved.

- While buprenorphine and naloxone sublingual film is dissolving, do not chew or swallow the film because the medicine will not work as well.

- Talking while the film is dissolving can affect how well the medicine in buprenorphine and naloxone sublingual film is absorbed.

- If you miss a dose of buprenorphine and naloxone sublingual film, take your medicine when you remember. If it is almost time for your next dose, skip the missed dose and take the next dose at your regular time. Do not take 2 doses at the same time unless your doctor tells you to. If you are not sure about your dosing, call your doctor.

- Do not stop taking buprenorphine and naloxone sublingual film suddenly. You could become sick and have withdrawal symptoms because your body has become used to the medicine. Physical dependence is not the same as drug addiction. Your doctor can tell you more about the differences between physical dependence and drug addiction. To have fewer withdrawal symptoms, ask your doctor how to stop using buprenorphine and naloxone sublingual film the right way.

- **If you take too much buprenorphine and naloxone sublingual film or overdose, call Poison Control or get emergency medical help right away.**

What should I avoid while taking buprenorphine and naloxone sublingual film?

- **Do not drive, operate heavy machinery, or perform any other dangerous activities until you know how this medication affects you.** Buprenorphine can cause drowsiness and slow reaction times. This may happen more often in the first few weeks of treatment when your dose is being changed, but can also happen if you drink alcohol or take other sedative drugs when you take buprenorphine and naloxone sublingual film.
- **You should not drink alcohol** while using buprenorphine and naloxone sublingual film, as this can lead to loss of consciousness or even death.

What are the possible side effects of buprenorphine and naloxone sublingual film?

Buprenorphine and naloxone sublingual film can cause serious side effects, including:

- **See “What is the most important information I should know about buprenorphine and naloxone sublingual film?”**
- **Respiratory problems.** You have a higher risk of death and coma if you take buprenorphine and naloxone sublingual film with other medicines, such as benzodiazepines.
- **Sleepiness, dizziness, and problems with coordination**
- **Dependency or abuse**
- **Liver problems.** Call your doctor right away if you notice any of these signs of liver problems: Your skin or the white part of your eyes turning yellow (jaundice), urine turning dark, stools turning light in color, you have less of an appetite, or you have stomach (abdominal) pain or nausea. Your doctor should do tests before you start taking and while you take buprenorphine and naloxone sublingual film.
- **Allergic reaction.** You may have a rash, hives, swelling of the face, wheezing, or a loss of blood pressure and consciousness. Call a doctor or get emergency help right away.
- **Anticholinergic Drugs**
- **Opioid withdrawal.** This can include: shaking, sweating more than normal, feeling hot or cold more than normal, runny nose, watery eyes, goose bumps, diarrhea, vomiting, and muscle aches. Tell your doctor if you develop any of these symptoms.
- **Decrease in blood pressure.** You may feel dizzy if you get up too fast from sitting or lying down.

Common side effects of buprenorphine and naloxone sublingual film include:

- Nausea
- Vomiting
- Drug withdrawal syndrome
- Headache
- Sweating
- Numb mouth
- Constipation
- Swollen and/or painful tongue
- The inside of your mouth is more red than normal
- Intoxication (feeling lightheaded or drunk)
- Disturbance in attention
- Irregular heart beat (palpitations)
- Decrease in sleep (insomnia)
- Blurred vision
- Back pain
- Fainting
- Dizziness
- Sleepiness

Tell your doctor about any side effect that bothers you or that does not go away.

These are not all the possible side effects of buprenorphine and naloxone sublingual film. For more information, ask your doctor or pharmacist.

Call your doctor for medical advice about side effects. You may report side effects to FDA at 1-800-FDA-1088.

How should I store buprenorphine and naloxone sublingual film?

- Store at room temperature at 20° to 25°C (68° to 77°F).
- **Keep buprenorphine and naloxone sublingual film in a safe place, out of the sight and reach of children.**

How should I dispose of unused buprenorphine and naloxone sublingual film?

- Dispose of unused buprenorphine and naloxone sublingual film as soon as you no longer need them.
- Unused films should be removed from the foil pouch and flushed down the toilet.
- Do not flush the buprenorphine and naloxone sublingual film foil pouch down the toilet.

If you need help with disposal of buprenorphine and naloxone sublingual film, call 1-888-375-3784.

General information about the safe and effective use of buprenorphine and naloxone sublingual film.

Medicines are sometimes prescribed for purposes other than those listed in a Medication Guide. Do not take buprenorphine and naloxone sublingual film for a condition for which it was not prescribed. Do not give buprenorphine and naloxone sublingual film to other people, even if they have the same symptoms you have. It may harm them and it is against the law.

This Medication Guide summarizes the most important information about buprenorphine and naloxone sublingual film. If you would like more information, talk to your doctor or pharmacist. You can ask your doctor or pharmacist for information that is written for health professionals.

For more information, call 1-888-375-3784.

What are the ingredients in buprenorphine and naloxone sublingual film?

Active ingredients: buprenorphine and naloxone
Inactive ingredients: aceulfumaric potassium salt, ammonium hydroxide, anhydrous citric acid, butylated hydroxyanisole, butylated hydroxytoluene, FD&C Blue No. 1, FD&C Yellow #6, lemon-lime flavor, maltitol, polyethylene oxide, povidone, shellac, and sodium phosphate dibasic anhydrous.

This Medication Guide has been approved by the U.S. Food and Drug Administration.

To reorder additional Medication Guides, please contact Dr. Reddy’s Customer Service at 1-866-733-3952.

Rx only

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Dr.Reddy’s

Table 4 Clinically Significant Drug Interactions	
Benzodiazepines and Other Central Nervous System (CNS) Depressants	
Clinical Impact:	Due to additive pharmacologic effects, the concomitant use of benzodiazepine or other CNS depressants, including alcohol, increases the risk of respiratory depression, profound sedation, coma, and death.
Intervention:	Cessation of benzodiazepines or other CNS depressants is preferred in most cases of concomitant use. In some cases, monitoring in a higher level of care for taper may be necessary. In others, gradually tapering a patient off of a prescribed benzodiazepine or other CNS depressant or decreasing to the lowest effective dose may be appropriate. Before co-prescribing benzodiazepines for anxiety or insomnia, ensure that patients are appropriately depressed and consider alternative medications and non-pharmacologic treatments (see <i>Warnings and Precautions</i> (2.2, 5.3)).
Examples:	Alcohol, non-benzodiazepine sedatives/hypnotics, anxiolytics, tranquilizers, muscle relaxants, general anesthetics, antiepileptics, and other opioids.
Inhibitors of CYP3A4	
Clinical Impact:	The concomitant use of buprenorphine and CYP3A4 inhibitors can increase the plasma concentration of buprenorphine, resulting in increased or prolonged opioid effects, particularly when an inhibitor is used at a stable dose of buprenorphine and naloxone sublingual film is achieved.
Intervention:	After stopping a CYP3A4 inhibitor, as the effects of the inhibitor decline, the buprenorphine plasma concentration will decrease (see <i>Warnings and Precautions</i> (12.3)), potentially resulting in decreased opioid efficacy or a withdrawal syndrome in patients who had developed physical dependence to buprenorphine.
Examples:	Macrolide antibiotics (e.g., erythromycin), azole-antifungal agents (e.g., ketoconazole), protease inhibitors (e.g., ritonavir).
CYP3A4 Inducers	
Clinical Impact:	The concomitant use of buprenorphine and CYP3A4 inducers can decrease the plasma concentration of buprenorphine (see <i>Clinical Pharmacology</i> (12.3)), potentially resulting in decreased efficacy or onset of a withdrawal syndrome in patients who have developed physical dependence to buprenorphine.
Intervention:	After stopping a CYP3A4 inducer, as the effects of the inducer decline, the buprenorphine plasma concentration will increase (see <i>Clinical Pharmacology</i> (12.3)), which could increase or prolong both therapeutic effects and adverse reactions and may cause serious respiratory depression.
Examples:	Carbamazepine, phenytoin
Antiretrovirals: Non-nucleoside reverse transcriptase inhibitors (NRTIs)	
Clinical Impact:	Non-nucleoside reverse transcriptase inhibitors (NRTIs) are metabolized primarily by CYP3A4. Efavirenz, nevirapine, and efavirenz are known CYP3A4 inducers; delamanvir, delamanvir is a CYP3A4 inhibitor. Significant pharmacokinetic interactions between NRTIs (e.g., efavirenz and delamanvir) and buprenorphine have been shown in clinical studies, but these pharmacokinetic interactions did not result in any significant pharmacodynamic effects.
Intervention:	Patients who are on chronic buprenorphine and naloxone sublingual film treatment should be aware they were monitored if NRTIs are added to their treatment regimen.
Examples:	efavirenz, nevirapine, delamanvir, delamanvir
Antiretrovirals: Protease inhibitors (PIs)	
Clinical Impact:	Studies have shown some antiretroviral protease inhibitors (PIs) with CYP3A4 inhibition (atazanavir, ritonavir, darunavir, and tipranavir) have no effect on buprenorphine pharmacokinetics and no significant pharmacodynamic effects. Other PIs with CYP3A4 inhibitory activity (atazanavir and atazanavir/ritonavir) resulted in elevated levels of buprenorphine and nortubuprenorphine, and patients in one study reported respiratory depression. Symptoms of opioid excess have been found in post-marketing reports of patients receiving buprenorphine and atazanavir with and without ritonavir concomitantly.
Intervention:	Monitor patients taking buprenorphine and naloxone sublingual film and atazanavir with or without ritonavir to reduce dose of buprenorphine and naloxone sublingual film if warranted.
Examples:	atazanavir, ritonavir
Antiretrovirals: Nucleoside reverse transcriptase inhibitors (NRTIs)	
Clinical Impact:	Nucleoside reverse transcriptase inhibitors (NRTIs) do not appear to induce or inhibit the P450 enzyme pathway, thus no interactions with buprenorphine are expected.
Intervention:	None
Sedative/Anxiolytic Drugs	
Clinical Impact:	The concomitant use of opioids with other drugs that affect the serotonergic neurotransmitter system has resulted in serotonin syndrome.
Intervention:	If concomitant use is warranted, carefully observe the patient, particularly during treatment initiation and dose adjustment. Discontinue buprenorphine and naloxone sublingual film if serotonin syndrome is suspected.
Examples:	Selective serotonin reuptake inhibitors (SSRIs), serotonin and norepinephrine reuptake inhibitors (SNRIs), tricyclic antidepressants (TCAs), tricyclic 5-HT3 receptor antagonists, drugs that affect the serotonin neurotransmitter system (e.g., triptans, tramadol), monoamine oxidase (MAO) inhibitors (used to treat psychiatric disorders and also others, such as linezolid and intravenous methylene blue).
Monoamine Oxidase Inhibitors (MAOIs)	
Clinical Impact:	MAOI interactions with opioids may manifest as serotonin syndrome or opioid toxicity (e.g., respiratory depression, coma).
Intervention:	The use of buprenorphine and naloxone sublingual film is not recommended for patients taking MAOIs or within 14 days of stopping such treatment.
Examples:	phenelzine, tranylcypromine, linezolid
Muscle Relaxants	
Clinical Impact:	Buprenorphine may enhance the neuromuscular blocking action of skeletal muscle relaxants and impair the respiratory system. The degree of impairment is dependent on the study data, and assuming milk consumption of 150 mL/kg/day, an exclusively breastfed infant would receive an estimated mean absolute infant dose (AID) of 0.56 mcg/kg/day of buprenorphine and 0.29 mcg/kg/day of nortubuprenorphine, or an estimated mean AID of 0.36% and 0.18%, respectively, of the maternal weight-adjusted dose.
Intervention:	Monitor patients receiving muscle relaxants and buprenorphine and naloxone sublingual film for signs of respiratory depression that may be greater than otherwise expected and decrease the dosage of buprenorphine and naloxone sublingual film and/or the muscle relaxant as necessary.
Diuretics	
Clinical Impact:	Opioids can reduce the efficacy of diuretics by inducing the release of antidiuretic hormone.
Intervention:	Monitor patients for signs of diminished diuresis and/or effects on blood pressure and increase the dosage of the diuretic as needed.
Anticholinergic Drugs	
Clinical Impact:	The concomitant use of anticholinergic drugs may increase the risk of urinary retention and/or severe constipation, which may lead to paralytic ileus.
Intervention:	Monitor patients for signs of urinary retention or reduced gastric motility when buprenorphine and naloxone sublingual film is used concomitantly with anticholinergic drugs.

8 USE IN SPECIFIC POPULATIONS
8.1 Pregnancy
Risk Summary

The data on use of buprenorphine, one of the active ingredients in buprenorphine and naloxone sublingual film, in pregnancy, are limited. These data do not include information on the risk of major malformations specifically due to buprenorphine exposure. There are limited data from randomized clinical trials in women maintained on buprenorphine that were not designed appropriately to assess the risk of major malformations (see *Data*). Observational studies have reported on congenital malformations among buprenorphine-exposed pregnancies, but were also not designed appropriately to assess the risk of congenital malformations specifically due to buprenorphine exposure (see *Data*). The extremely limited data on sublingual naloxone exposure in pregnancy are not sufficient to assess drug-associated risk.

Reproductive and developmental studies in rats and rabbits identified adverse events at clinically relevant and higher doses. Embryofetal death was observed in both rats and rabbits administered buprenorphine during the period of organogenesis at doses approximately 6 and 0.3 times, respectively, the human sublingual dose of 16 mg/day of buprenorphine. Pre- and perinatal development studies in rats demonstrated increased neonatal deaths at 0.3 times and above and dystocia at approximately 3 times the human sublingual dose of 16 mg/day of buprenorphine. No clear teratogenic effects were seen when buprenorphine was administered during organogenesis at a range of doses equivalent to the human sublingual dose of 16 mg/day of buprenorphine. However, increases in skeletal abnormalities were noted in rats and rabbits administered buprenorphine daily during organogenesis at doses approximately 0.6 and approximately equal to the human sublingual dose of 16 mg/day of buprenorphine, respectively. In a few cases, these events such as acropachia and omphalocele were also observed but these findings were not clearly treatment-related (see *Data*). Based on animal data, advise pregnant women of the potential risk to a fetus.

The estimated background risk of major birth defects and miscarriage for the indicated population are unknown. All pregnancies have a background risk of birth defect, loss, or other adverse outcomes. In the U.S. general population, the estimated background risk of major birth defects and miscarriage in clinically recognized pregnancies is 2 to 4% and 15 to 20%, respectively. Clinical Considerations

Disease-associated maternal and embryo-fetal risk

Untreated opioid addiction in pregnancy is associated with adverse obstetrical outcomes such as low birth weight, preterm birth, and fetal death. In addition, untreated opioid addiction often results in continued or relapsing illicit opioid use.

Dose Adjustment during Pregnancy and the Postpartum Period

Dosage adjustments of buprenorphine may be required during pregnancy, even if the patient was maintained on a stable dose prior to pregnancy. Withdrawal signs and symptoms should be monitored closely and the dose adjusted as necessary.

Fetal/neonatal adverse reactions

Neonatal opioid withdrawal syndrome may occur in newborn infants of mothers who are receiving treatment with buprenorphine and naloxone sublingual film.

Neonatal opioid withdrawal syndrome presents as irritability, hyperactivity and abnormal sleep pattern, high pitched cry, tremor, vomiting, diarrhea, and/or failure to gain weight. Signs of neonatal withdrawal usually occur in the first days after birth. The duration and severity of neonatal opioid withdrawal syndrome may vary. Observe newborns for signs of neonatal opioid withdrawal syndrome and manage accordingly (see *Warnings and Precautions* (5.3)).

Labor or Delivery

Opioid-dependent women on buprenorphine maintenance therapy may require additional analgesia during labor.

Data

Human Data

Studies have been conducted to evaluate neonatal outcomes in women exposed to buprenorphine during pregnancy. Limited data on malformations from trials, observational studies, case series, and case reports on buprenorphine use in pregnancy do not indicate an increased risk of major malformations specifically due to buprenorphine. Several factors may complicate the interpretation of investigations of the children of women who take buprenorphine during pregnancy, including maternal use of illicit drugs, late presentation for prenatal care, infection, poor compliance, poor nutrition, and psychosocial circumstances. Interpretation of data is complicated further by the lack of information on untreated opioid-dependent pregnant women, who would be the most appropriate group for comparison. Rather, women on another form of opioid medication-assisted treatment, or women in the general population are generally used as the comparison group. However, women on other forms of opioids may be different from women prescribed buprenorphine-containing products with respect to maternal factors that may lead to poor pregnancy outcomes.

In a multicenter, double-blind, randomized, controlled trial (Maternal Opioid Treatment: Human Experimental Research (MOTHER)) designed primarily to assess neonatal opioid withdrawal symptoms, opioid-dependent pregnant women were randomized to buprenorphine (n=86) or methadone (n=89) treatment, with enrollment at an average gestational age of 18.7 weeks in both groups. A total of 23 of the 86 women in the buprenorphine group (33%) and 16 of the 89 women in the methadone group (18%) discontinued treatment before the end of pregnancy. Among women who remained in treatment until delivery, there was no difference between buprenorphine-treated and methadone-treated groups in the number of neonates requiring NOWS treatment or in the peak severity of NOWS. Buprenorphine-exposed neonates required

less morphine (mean total dose, 1.1 mg vs. 10.4 mg), had shorter hospital stays (10 days vs. 17.5 days), and shorter duration of treatment for NOWS (4.1 days vs. 3.9 days) compared to methadone. There were no differences in neonatal mortality, respiratory depression, or other outcomes (neonatal head circumference), or secondary outcomes (weight and length at birth, preterm birth, gestational age at delivery, and 1-minute and 5-minute Apgar scores), or in the rates of maternal or neonatal adverse events. The outcomes among mothers who discontinued treatment during pregnancy may have been biased to illicit opioid use only, because of the imbalance in discontinuation rates between the buprenorphine and methadone groups; the study findings are difficult to interpret.

Animal Data

The exposure margins listed below are based on body surface area comparisons (mg/m²) to the human sublingual dose of 16 mg buprenorphine via buprenorphine and naloxone sublingual tablets. Effects on embryo-fetal development were studied in Sprague-Dawley rats and Russian white rabbits following oral (1-) and intramuscular (IM) (2-) administration of mixtures of buprenorphine and naloxone during the period of organogenesis. Following oral administration to rats no teratogenic effects were observed at buprenorphine doses up to 250 mg/kg/day (estimated exposure approximately 15 times the human sublingual dose of 16 mg) in the presence of maternal toxicity (mortality). Following oral administration to rabbits, no teratogenic effects were observed at buprenorphine doses up to 40 mg/kg/day (estimated exposure approximately 50 times the human sublingual dose of 16 mg) in the absence of clear maternal toxicity. No definitive drug-related teratogenic effects were observed in rats and rabbits at IM doses up to 30 mg/kg/day (estimated exposure approximately 20 times and 35 times, respectively, the human sublingual dose of 16 mg). Maternal toxicity resulting in mortality was noted in these studies in both rats and rabbits. Acropachia was observed in one rabbit fetus from the low-dose group and omphalocele was observed in two rabbit fetuses from the same litter in the mid-dose group; no findings were observed in fetuses from the high-dose group. Maternal toxicity was seen in the high-dose group but not at the lower doses where the findings were observed. Following oral administration of buprenorphine to rats, dose-related post-implantation losses were observed by increases in the numbers of early resorptions with consequent reductions in the numbers of fetuses, were observed at doses of 10 mg/kg/day or greater (estimated exposure approximately 6 times the human sublingual dose of 16 mg). In the rat, the incidence of post-implantation losses was increased by increases in buprenorphine IM administration in the rat and rabbit, post-implantation losses, as evidenced by decreases in live fetuses and increases in resorptions, occurred at 30 mg/kg/day.

Buprenorphine was not teratogenic in rats or rabbits after IM or subcutaneous (SC) doses up to 5 mg/kg/day (estimated exposure was approximately 3 and 6 times, respectively, the human sublingual dose of 16 mg) after doses up to 0.8 mg/kg/day (estimated exposure was approximately 0.5 times and equal to, respectively, the human sublingual dose of 16 mg), or after oral doses up to 160 mg/kg/day in rats (estimated exposure was approximately 95 times the human sublingual dose of 16 mg) and 25 mg/kg/day in rabbits (estimated exposure was approximately 30 times the human sublingual dose of 16 mg). Significant increases in skeletal abnormalities (e.g., extra thoracic vertebrae or thoraco-lumbar ribs) were noted in rats after SC administration of 1 mg/kg/day and up (estimated exposure was approximately 0.6 times the human sublingual dose of 16 mg), but not at oral doses up to 160 mg/kg/day. Increases in skeletal abnormalities in rabbits after IM administration of 5 mg/kg/day (estimated exposure was approximately 6 times the human daily sublingual dose of 16 mg) in the absence of maternal toxicity or oral administration of 1 mg/kg/day or greater (estimated exposure approximately equal to the human sublingual dose of 16 mg) were not statistically significant.

In rabbits, buprenorphine produced statistically significant pre-implantation losses at oral doses of 1 mg/kg/day or greater and post-implantation losses that were statistically significant at IV doses of 0.2 mg/kg/day or greater (estimated exposure approximately 0.3 times the human daily sublingual dose of 16 mg). No maternal toxicity was observed at doses causing post-implantation loss in this study.

Dystocia was noted in pregnant rats treated intramuscularly with buprenorphine from Gestation Day 14 through Lactation Day 21 at 5 mg/kg/day (approximately 3 times the human sublingual dose of 16 mg). Fertility, pre- and post-natal development studies with buprenorphine in rats indicated increases in neonatal mortality after oral doses of 0.8 mg/kg/day and up (approximately 0.5 times the human daily sublingual dose of 16 mg), or oral doses of 0.5 mg/kg/day and up (approximately 0.3 times the human sublingual dose of 16 mg), and after SC doses of 1 mg/kg/day and up (approximately 0.6 times the human sublingual dose of 16 mg). An apparent lack of milk production during these studies likely contributed to the decreased pup viability and lactation indices. Delays in the occurrence of estrus in the human subjects were noted in one study at an oral dose of 80 mg/kg/day (approximately 50 times the human sublingual dose of 16 mg).

8.2 Lactation
Risk Summary

Based on two studies in 13 lactating women maintained on buprenorphine treatment, buprenorphine and its metabolite nortubuprenorphine were present in low levels in human milk and infant urine. Available data do not show any adverse reactions in breastfed infants. There are no data on the combination product buprenorphine/naloxone in breastfeeding, however oral absorption of naloxone is limited. The developmental and health benefits of breastfeeding outweigh the risks of potential exposure to breastmilk. Buprenorphine/naloxone combination sublingual film and any potential adverse effects on the breastfed child from the drug or from the underlying maternal condition.

Clinical Considerations

Advise breastfeeding women taking buprenorphine products to monitor the infant for increased drowsiness and breathing difficulties.

Data

Data were consistent from two studies (N=13) of breastfeeding infants whose mothers were maintained on sublingual doses of buprenorphine ranging from 2.4 to 24 mg/day, showing that the infants were exposed to less than 1% of the maternal daily dose.

In a study of six lactating women who were taking a median sublingual buprenorphine dose of 0.42 mg/kg/day (range 0.2 to 0.8 mg/kg/day), breast milk of the infant of one woman contained 0.42 mcg/kg/day of buprenorphine and 0.33 mcg/kg/day of nortubuprenorphine, equal to 0.2% and 0.12%, respectively, of the maternal weight-adjusted dose (relative dose % (RD) of nortubuprenorphine was calculated from the assumption that buprenorphine and nortubuprenorphine are equipotent).

Data from a study of seven lactating women who were taking a median sublingual buprenorphine dose of 7 mg/day an average of 1.12 months after delivery indicated that the mean milk concentrations (C_{milk}) of buprenorphine and nortubuprenorphine were 3.65 mcg/L and 1.84 mcg/L, respectively. The mean milk concentrations in these women were approximately 150 mL/kg/day, an exclusively breastfed infant would receive an estimated mean absolute infant dose (AID) of 0.56 mcg/kg/day of buprenorphine and 0.29 mcg/kg/day of nortubuprenorphine, or an estimated mean AID of 0.36% and 0.18%, respectively, of the maternal weight-adjusted dose.

8.3 Females and Males of Reproductive Potential
Fertility

Chronic use of opioids may cause reduced fertility in females and males of reproductive potential. It is not known whether these effects on fertility are reversible (see *Adverse Reactions* (17), *Clinical Pharmacology* (12.2), *Nonclinical Toxicology* (13.1)).

The safety and effectiveness of buprenorphine and naloxone sublingual film have not been established in pediatric patients. This product is not appropriate for the treatment of neonatal abstinence syndrome in neonates, because it contains naloxone, an opioid antagonist.

8.5 Geriatric Use

Clinical studies of buprenorphine and naloxone sublingual film, buprenorphine and naloxone sublingual tablets, or buprenorphine sublingual tablets did not include sufficient numbers of subjects aged 65 and older to determine whether they responded differently than younger subjects. Differences in responses between these age groups cannot be determined between the elderly and younger patients. Due to possible decreased hepatic, renal, or cardiac function and of concomitant disease or other drug therapy in geriatric patients, the decision to prescribe buprenorphine and naloxone sublingual film should be made cautiously in individuals 65 years of age or older and these patients should be monitored for signs and symptoms of toxicity or overdose.

8.6 Hepatic Impairment

The effect of hepatic impairment on the pharmacokinetics of buprenorphine and naloxone have been evaluated in a pharmacokinetic study. Both drugs are extensively metabolized in the liver, with no renal excretion of unchanged drug. The difference in magnitude of buprenorphine and naloxone sublingual tablets. In contrast, one 8 mg/2 mg and one 12 mg/2 mg buprenorphine and naloxone sublingual tablets. The difference in magnitude of the effects on naloxone and buprenorphine are greater in subjects with severe hepatic impairment than in subjects with moderate hepatic impairment, and therefore the clinical impact of buprenorphine and naloxone sublingual tablets. A combination of one 8 mg/2 mg and two 2 mg/0.5 mg buprenorphine and naloxone sublingual films (total dose of 12 mg/3 mg buprenorphine and naloxone sublingual films) showed higher relative bioavailability. Table 5, below, illustrates the relative increase in exposure to buprenorphine and naloxone associated with buprenorphine and naloxone sublingual films compared to buprenorphine and naloxone sublingual tablets, and shows the effect of route of administration (see *Dosage and Administration* (2.9, 2.10)).

Cross relevant pharmacokinetic studies, the pharmacokinetic parameters and exposures derived from the buccal and sublingual administrations of buprenorphine and naloxone sublingual film were comparable to one another.

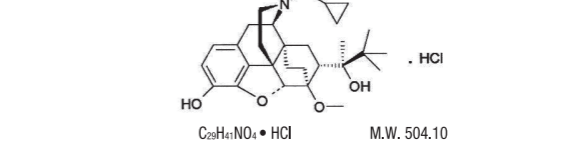
Table 5. Changes in Pharmacokinetic Parameters for Buprenorphine and Naloxone Sublingual Film Compared to Buprenorphine or Buccally in Comparison to Buprenorphine and Naloxone Sublingual Tablet

and medical surveillance needed to reverse the effects of an overdose. Insufficient duration of monitoring may put patients at risk.

11 DESCRIPTION

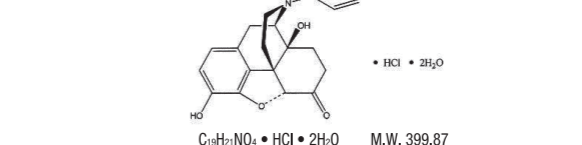
Buprenorphine and naloxone sublingual film, 4 mg/1 mg or 12 mg/3 mg are orange rectangular films, imprinted with “4” or “12” in blue ink as a strength identifier (“4” or “12” may appear to be green in color). It contains buprenorphine HCl, a mu-opioid receptor partial agonist, and a kappa-opioid receptor antagonist, and naloxone HCl dihydrate, an opioid antagonist, at a ratio of 4:1 (ratio of free bases). It is intended for sublingual or buccal administration and is available as 4 mg buprenorphine with 1 mg naloxone and 12 mg buprenorphine with 3 mg naloxone. Each film also contains aceulfumaric potassium salt, ammonium hydroxide, anhydrous citric acid, butylated hydroxyanisole, butylated hydroxytoluene, FD&C Blue No. 1, FD&C Yellow #6, lemon-lime flavor, maltitol, polyethylene oxide, povidone, shellac, and sodium phosphate dibasic anhydrous.

Chemically, buprenorphine HCl is (2S)-2-(17-(O)-cyclopropylmethyl-4,5-epoxy-3-hydroxy-6-methoxy-6a,14-ethano-14a-morphinan-7-yl)-N-(1-(2S,3S)-dimethylbutan-2-yl) hydrochloride. It has the following chemical structure:



Buprenorphine HCl is a white or almost white crystalline powder, sparingly soluble in water, freely soluble in methanol, and practically insoluble in cyclohexane and toluene and ether.

Chemically, naloxone HCl dihydrate is 17-AM-4,5-*epoxy*-3,14-dihydrooxymorphan-6-one hydrochloride dihydrate. It has the following chemical structure:



Naloxone hydrochloride dihydrate is a white or almost white powder and is soluble in water, slightly soluble in methanol, and practically insoluble in toluene and ether.

12 CLINICAL PHARMACOLOGY

12.1 Mechanism of Action

The pharmacologic actions of buprenorphine film contains buprenorphine and naloxone. Buprenorphine is a partial agonist at the mu-opioid receptor and an antagonist at the kappa-opioid receptor. Naloxone is a potent antagonist at mu-opioid receptors and produces opioid withdrawal signs and symptoms in individuals physically dependent on full opioid agonists when administered parenterally.

12.2 Pharmacodynamics
Subjective Effects

Comparisons of buprenorphine to full opioid agonists such as methadone and hydromorphone suggest that sublingual buprenorphine produces typical opioid agonist effects which are limited by a ceiling effect.

In opioid-experienced subjects who were not physically dependent, acute sublingual doses of buprenorphine/naloxone tablets produced opioid agonist effects which reached a maximum between doses of 8 mg/2 mg and 16 mg/4 mg buprenorphine/naloxone.

Opioid agonist ceiling-effects were also observed in a double-blind, parallel group, dose-ranging comparison of single doses of buprenorphine sublingual solution (1, 2, 4, 8, 16, or 32 mg), placebo and a full agonist control at various doses. The treatments were given in ascending dose order at intervals of at least one week to 16 opioid-experienced subjects who were not physically dependent. Both active drugs produced typical opioid agonist effects. For all measures for which the drugs produced an effect, buprenorphine produced a dose-related response. However, in each case, there was a dose that produced further effect. In contrast, the highest dose of the full agonist control always produced the greatest effects. Agonist objective rating scores remained elevated for the higher doses of buprenorphine (8 mg to 32 mg) longer than for the lower doses and did not return to baseline until 48 hours after drug administration. The onset of effects appeared more rapidly with buprenorphine than with the full agonist control, with most doses reaching peak effect after 100 minutes for buprenorphine compared to 150 minutes for the full agonist control.

Physiologic Effects

Buprenorphine in IV (2, 4, 8, 12 and 16 mg) and sublingual (12 mg) doses has been administered to non-dependent, pain-free, opioid-naïve subjects who were monitored to examine cardiovascular, respiratory, and subjective effects at doses comparable to those used for treatment of opioid dependence. Compared to placebo, there were no statistically significant differences among any of the treatment conditions for blood pressure, heart rate, respiratory rate, or skin temperature across time. Systolic BP was higher in the 8 mg group than placebo (3 hour AUC values). Minimum and maximum effects were similar across all treatments. Subjects remained responsive to low voice and responded to computer prompts. Some subjects showed irritability, but no other changes were observed.

The respiratory effects of sublingual buprenorphine were compared with the effects of buprenorphine in a double-blind, parallel group, dose ranging comparison of single doses of buprenorphine sublingual solution (1, 2, 4, 8, 16, or 32 mg) and oral methadone (15, 30, 45, or 60 mg) in non-dependent, opioid-experienced volunteers. In this study, hypoventilation not requiring clinical intervention was reported more frequently after buprenorphine doses of 4 mg and higher than after methadone. Both drugs decreased O₂ saturation to the same degree.

Effect of Naloxone

Physiologic and subjective effects following acute sublingual administration of buprenorphine tablets and buprenorphine/naloxone tablets were similar at equivalent dose levels of buprenorphine. Naloxone had no clinically significant effect when administered by the sublingual route. In contrast, when administered by the oral route, buprenorphine/naloxone tablets by persons with active sublingual heroin or other full mu-opioid dependence. However, clinicians should be aware that some opioid-dependent persons, particularly those with a low level of full mu-opioid physical dependence, those whose physical dependence is predominantly to buprenorphine, abuse buprenorphine/naloxone combinations by the intravenous or intranasal route. In methadone-maintained patients and heroin-dependent subjects, IV administration of buprenorphine/naloxone combinations precipitated opioid withdrawal signs and symptoms and was perceived as unpleasant and dysphoric. In morphine-stabilized subjects, intravenously administered combinations of buprenorphine with naloxone produced opioid antagonist and withdrawal signs and symptoms that were ratio-dependent, the most intense withdrawal signs and symptoms were produced by 2:1 and 4:1 ratios, less intensity by 1:1 ratio.

Effects on the Endocrine System

Opioids inhibit the secretion of adrenocorticotropic hormone (ACTH), cortisol,