

**This Fast Fact does NOT address Fentora™ (oravescent buccal tablet)-see the Fentora Fast Fact for more information on the buccal formulation of fentanyl**

Oral transmucosal fentanyl citrate (OTFC) is a solid formulation of fentanyl that resembles a lozenge on a handle and is intended for oral transmucosal administration. Fentanyl is one of the most lipid-soluble opioids and when placed in saliva under normal conditions of the mouth is 80% nonionized making it the only opioid formulated for transmucosal absorption.

Fentanyl is generally considered 100 times more potent than morphine. However, bioavailability of OTFC depends on the fraction of the dose that is absorbed through the oral mucosa and the fraction that is swallowed. OTFC has been shown to produce an onset of analgesia while consuming the unit (fentanyl begins to cross the blood-brain barrier in as little as 3-5 minutes), with peak effect at approximately 45 minutes after the start of administration, and a duration of action of 2 to 3 hours.

An easy way to conceptualize the profile of OTFC is that it is comparable to an IV bolus of opioid in terms of its onset, peak, and duration.



Approximate equivalents

| parenteral morphine | parenteral fentanyl | transmucosal fentanyl |
|---------------------|---------------------|-----------------------|
| 2mg                 | 20mcg (0.02mg)      | 200mcg                |

**Prescribing Information:**

- OTFC is available in 200, 400, 600, 800, 1200 & 1600mcg dosage strengths.
- No predictive relationships were seen between patient, pain episode, around-the-clock or rescue analgesic factors and the successful dose of OTFC in either titration or long-term efficacy studies. This means OTFC should always be started at 200mcg and then individually titrated based on patient response. If the first dose of 200mcg is inadequate in providing relief, the patient should wait for 15 minutes and take a second unit. If pain is relieved after the second dose of 200 mcg, the dose to use for the next episode of breakthrough pain would be 400mcg. The patient should be instructed not to take more than two units per pain episode during the initial titration period.
- The amount of fentanyl absorbed from each single dose remains stable over multiple administrations. This fact, combined with fentanyl's short half-life, reduces the risk of a cumulative increase in serum level with repetitive doses.
- Studies in opioid-tolerant cancer patients have shown typical opioid dose-related side effects including somnolence, nausea and dizziness.

**Important Patient Information on Consumption Technique and Storage:**

- The OTFC is administered by placing it between the cheek and gums next to the buccal mucosa, moving the unit gently from side to side. Chewing or sucking OTFC may result in more drug being swallowed, which will limit the amount absorbed and reduce efficacy. In clinical studies, 15 minutes seemed to be the ideal amount of time to consume a unit to achieve the desired onset and peak effect.

- Peak blood level with OTFC occurs 20-40 minutes from the beginning of consumption of the OTFC unit.
- Patients with little saliva may not be able to dissolve the unit within the desired time. Absorption likely also depends on the amount of saliva swallowed without adequate exposure of the OTFC unit to the mucosal surface. In other words, patients should be told to swirl saliva produced from the dissolving unit around their mouth prior to swallowing it.
- Positioning of the matrix in the mouth also affects the absorption. Drug permeability is lowest through the gums and tongue. Ideally the matrix should be swabbed across the inside of the cheek and not placed on the tongue. Patients should be instructed to avoid drinking fluids such as coffee, cola, or citrus fruit juices prior to drug administration which may reduce the pH of the mouth and decrease fentanyl absorption. Patients may, however, moisten their mouths with water prior to medicine use to increase saliva.
- ACTIQ<sup>®</sup> units are designed for one-time administration. However, patients should be instructed to remove the unit from their mouth (and dispose of it according to directions) if usage results in excessive opioid-related side effects.
- Instruct patients to utilize the manufacturer's safety containers to store the dosage units, and discard any unused portion of the OTFC by dissolving it under hot tap water. The drug should be stored under room temperature, and not be frozen.

*References:*

- Portenoy, RK, Payne R, Coluzzi P, et al. Oral transmucosal fentanyl citrate (OTFC) for the treatment of breakthrough pain in cancer patients: a controlled dose titration study. *Pain*, 1999;79:303-312.
- Gordon DB. Oral Transmucosal Fentanyl Citrate (OTFC) for Cancer Breakthrough Pain: A Review. *Oncology Nursing Forum*, 2006;33(2):257-264.
- Shah H, Smythe J, Hanafiah Z, Williams GJP, Holdcroft A. Factors in the choice of oral transmucosal fentanyl citrate dose for adult burns dressings. *Burns*, 2009;35:798-801.