

# Fentanyl Patch

## BRAND NAME: DURAGESIC PATCHES

available in  
12.5 microgram per hour  
25 microgram per hour,  
50 microgram per hour,  
75 microgram per hour and  
100 microgram per hour  
PATCHES

## BACKGROUND

Research into the human experience of pain and its relief has yielded some important information.

- Recovery from illness is faster if pain is alleviated
- It is more effective to prevent pain than to alleviate existing pain (i.e., using pain medications in anticipation of pain is more effective than waiting until the pain already exists)
- Continuous delivery of pain relief is more effective than periodic administration of pain relief

Animals need pain relievers in the same situations that humans do. Clearly it behooves us to relieve animal pain and this must be done effectively and with neither struggling with the sick patient nor with being bitten during attempts to give pills. Transdermal (through the skin) drug delivery has been very popular for a number of human medications. It turns out many of these can be adapted to pets. This allows not only for continuous pain relief delivery but also allows for medication to be administered without manipulating the patient's mouth.

## HOW THIS MEDICATION WORKS

Fentanyl is a narcotic, a member of the same group of drugs to which opium and morphine belong.

Most of us are familiar with at least some of the opiate effects: pain relief, drowsiness, euphoria, addictiveness, diarrhea control, respiratory depression, hallucinations etc. There are opiate receptors of various types throughout the nervous system. Stimulation of different receptors produce different opiate effects. In this way, certain opiate drugs can achieve different effects from other opiate drugs. The "mu" receptor is responsible for the narcotic effects of euphoria, strong pain relief, addiction, and respiratory depression. There are also "kappa," "delta," and "sigma" receptors with other effects such as pupil constriction and hallucinations. In seeking to relieve pain, we want to select a strong mu receptor stimulant without stimulating the other receptors.

Fentanyl binds only the mu receptor and does so approximately 75 to 100 times stronger than morphine, making it an excellent choice for pain relief. It reaches its peak blood level in 3 to 6 hours in cats but may require a full 12 hours in dogs to reach its full effect. After removal, fentanyl blood levels drop to zero within 24 hours. Patches last at least 3-4 days for dogs and 5 days or so for cats; though in very painful situations (such as orthopedic surgery) additional pain medicines will likely be necessary.

## SIDE EFFECTS

The most serious potential side effect is respiratory depression (i.e. not breathing adequately). This is a rare problem but if unusual weakness or drowsiness is observed, the drug may be creating a stronger effect than expected. A fentanyl patch may be removed if there is any concern. This effect could become a significant risk if the patch is exposed to heating (electric blankets, sitting near a heater vent, heated water bed etc.) The patch may be toxic if swallowed.

Occasionally, a pet reacts to the adhesive on the back of the patch. Such skin reactions should resolve with patch removal and application of a topical cortisone product.

The euphoria effect can lead to an excessive appetite though in some animals, nausea may result, leading to a reduced appetite.

Fentanyl is not felt to be a sedative in the cat but in the dog some sedation may be observed. A wobbly gait may be a sign of sedation.

There is some variability in the blood levels achieved by different individuals. Some individuals require additional medication for “breakthrough” pain.

Fentanyl may cause dilated pupils in cats. This could manifest as aversion to bright light or sunshine.

Fentanyl can slow heart rate. This is generally not an issue unless other medications are added (see below).

## **INTERACTIONS WITH OTHER MEDICATIONS**

Fentanyl should be used with caution in combination with medications that have sedating properties such as antihistamines or other sedating pain relievers. Over-sedation may result.

Narcotics, including fentanyl, should not be used in patients using Anipryl/L-Deprenyl for either the treatment of Cushing's disease or for senility/cognitive dysfunction.

Concurrent use of fentanyl and diuretics may reduce the effectiveness of the diuretics.

Macrolide antibiotics (such as erythromycin) may slow removal of fentanyl from the body and create a stronger than expected fentanyl effect. Similar issues occur with ketoconazole, itraconazole, fluconazole, and cimetidine. Conversely, there are medications that enhance clearing of fentanyl for a weaker effect: phenobarbital, mitotane, and griseofulvin.

Fentanyl should not be combined with tramadol as high blood pressure or seizures could result.

Medications that reduce blood pressure may compound the slowing of the heart rate that can occur with fentanyl. Blood pressure can drop lower than expected.

## **CONCERNS AND CAUTIONS**

Fentanyl is a “controlled” drug meaning that special government paperwork is required to order and stock it. Your veterinarian may require you to return any used patches for documentation of proper disposal.

### **THE APPLICATION OF HEAT TO A FENTANYL PATCH CAN LEAD TO SUDDEN DELIVERY OF A LARGE AMOUNT OF FENTANYL.**

**(Be careful of heating pads or electric blankets).**

**Human deaths have been reported in patch-wearing patients sleeping on heated water beds. If your pet has a fentanyl patch, be sure to avoid situations where the patch could be excessively heated.**

Fentanyl patches may be toxic if swallowed by small children. Be conscious of any children curious about the patch or attempting to manipulate it.

If a patch is to be disposed of at home, it should be flushed down the toilet and not thrown in the trash.

Last updated: 6/5/2022



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Additional drug and general pet care information can be found on our world wide web site:

<http://www.marvistavet.com>