

Texas Veterinary Behavior Services

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Fluoxetine (Prozac®)

GENERAL DRUG INFORMATION

Fluoxetine is a selective serotonin reuptake inhibitor (SSRI) antidepressant. SSRIs such as fluoxetine can reduce anxiety and improve mood.

Fluoxetine blocks the serotonin reuptake transporter resulting in prolonged duration of action of the neurotransmitter serotonin in the neuron synaptic cleft. Serotonin is an inhibitory neurotransmitter that affects mood, appetite, sleep, and anxiety. Fluoxetine also has direct agonist actions at the serotonin 2A receptor accounting for some of its potential appetite reducing effects. Fluoxetine has some effect increasing dopamine in the forebrain which can help with focus and learning and increasing motivation in depressive states.

COMMON VETERINARY INDICATIONS:

- Separation anxiety
- Generalized anxiety
- Wide spread or severe noise fears or phobias
- Fear Aggression
- Stereotypic or compulsive behaviors
- Feline inappropriate elimination
- Cribbing behavior in horses
- Impulse control disorders

ADMINISTRATION:

- Fluoxetine is available as a capsule, tablet or oral solution.
 - 10mg and 20mg, and 60mg oral tablets.
 - 10mg, 20mg, and 40mg oral capsules.
 - 4mg/mL oral solution.
- Fluoxetine is a medication prescribed by veterinarians to be given once daily.
- Give fluoxetine only to the patient for which it was prescribed in accordance with the directions given by your veterinarian.
- If a dose is accidentally missed, the next scheduled dose should be given as prescribed. Do not double up on doses as this may result in toxicity to your pet.
- Effects of the medication can sometimes be seen within the first 2 weeks; however, others patients may take as long as 8 weeks to reach therapeutic effects.
- Your veterinarian may need to adjust the dose of medication to increase efficacy and/or decrease side effects.

- If more than the prescribed dose of fluoxetine is given, contact your veterinarian for further instructions.
- Fluoxetine can be given with or without food. Giving the medication with food may prevent stomach upset that is sometimes associated with this medication.
- Do not stop giving fluoxetine abruptly as discontinuation symptoms may occur. Work with your veterinarian to taper the amount you are giving over time to reduce any side effects.

STABILITY AND STORAGE:

- Fluoxetine capsules and tablets should be stored in a tightly sealed, childproof container, protected from light, and at room temperature.
- Fluoxetine oral solution should be kept in a tightly sealed, light-resistant container at room temperature.
- Fluoxetine oral solution has been mixed with various juices and flavorings (e.g., tuna-flavored water) and found to be stable for 8 weeks.

SIDE EFFECTS:

- During clinical trials in dogs, the most common side effects included lethargy, GI effects, anxiety, irritability, insomnia/hyperactivity, trembling, or panting.
- Anorexia or reduced appetite is a common side effect. This may be transient and resolve after 1-2 weeks. It may also be mitigated by increasing the palatability of food. Some episodes of anorexia are persistent. Please contact your veterinarian if appetite suppression is noted.
 - Appetite suppression in cats is concerning so please contact your veterinarian immediately if this is seen in a cat.
- Irritability and aggressive behavior have been reported in animals on fluoxetine. This generally is seen within 2-3 weeks of starting treatment or changing a dose. If increased aggression is seen, please contact the prescribing veterinarian immediately for further instructions.
- In clinical trials in dogs, seizures were reported in a few of the dogs treated with fluoxetine. However, lab studies indicate that fluoxetine actually has anti-convulsant properties and exacerbation of seizures has not been an issue in clinical cases with dogs. Causality and incidence rates have not been determined.
- In dogs, at excessively high doses of 10-20 mg/kg, fluoxetine caused tremors, anorexia, aggressive behavior, nystagmus, emesis, and ataxia.
- Side effects seen clinically in cats included anxiety, irritability, sleep disturbances, anorexia, and changes in elimination patterns. However, in clinical trials where fluoxetine was used to treat urine spraying, the medication was well tolerated and few adverse effects were observed.
 - In cats, a dose of 3 mg/kg produced anorexia and vomiting. A dose of 5 mg/kg produced tremors.
- Overdoses of fluoxetine can lead to serotonin syndrome. Signs of serotonin syndrome may include agitation, fever, increased heart rate, hypersalivation, vomiting, diarrhea, sedation, and weakness. Serotonin syndrome can be fatal.
 - If you think your dog or cat is experiencing any of the aforementioned signs, please contact your veterinarian immediately.
 - Serotonin syndrome can also result from the administration of fluoxetine in conjunction with other medications or some supplements available over-the-counter (see Drug Interactions below).

DRUG INTERACTIONS:

- There is a long list of medications that when combined with fluoxetine may increase the likelihood of serotonin syndrome.
 - Fluoxetine should be used with caution (and careful supervision) with other behavior modifying drugs such as other SSRIs, tricyclic antidepressants, or trazodone. Supplements, such as those containing L-tryptophan, as well as St. John's Wort, can also contribute to serotonin syndrome when combined with fluoxetine.
 - Please let your veterinarian know of any supplements/medications you are currently giving your cat/dog. Additionally, before adding any supplements or medications, please consult with your veterinarian.
- Fluoxetine should not be used with amitraz-based products such as the Preventic collar, Certifect, or Mitaban dip. Let your veterinarian know if your dog or cat has worn a flea collar within two weeks of starting fluoxetine. As mentioned above, do not use fluoxetine with MAOIs as there is a high risk for serotonin syndrome. A two week washout period is needed between the use of fluoxetine and MAOIs (e.g., selegiline).
- Fluoxetine should be used with caution when combined with the following commonly used veterinary drugs: diazepam, alprazolam, propranolol, and trazodone. When combined with fluoxetine, the aforementioned drugs show increased plasma levels.
- Cyproheptadine may decrease or reverse the effects of fluoxetine.
- The use of fluoxetine with a diuretic may result in low sodium levels.

WARNINGS/CONTRAINDICATIONS:

- Fluoxetine should be used with caution in patients with diabetes mellitus as it may alter blood glucose levels.
- Fluoxetine should be used with caution in dogs with epilepsy or a history of seizures.
- Because fluoxetine is primarily metabolized in the liver, dosages may need to be reduced in patients with severe liver impairment.
- Fluoxetine should also be used with caution in animals with kidney dysfunction.
- The safety of fluoxetine during pregnancy has not been established. Pulmonary hypertension has been observed in experimental animals late in pregnancy. Preliminary reproductive studies conducted in rats have shown no evidence of birth defects.