

TOP 5 / PEER REVIEWED



Tips for Postoperative At-Home Care



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The outcome of a surgical procedure is often determined *after* a patient leaves the practice because most postoperative healing and recovery happen at home under the client's care. Thorough yet simple instructions are therefore essential to ensure a successful recovery. Clients may not be familiar with veterinary terminology, so explain at-home care in plain, easy-to-understand terms that match the written discharge instructions. Written instructions are important because the client may be overwhelmed by the postoperative care his or her pet will need and may not remember everything he or she was told.

Top 5 Tips for Postoperative At-Home Care

- Explain Every Medication
- Describe the Surgical Site
- Discuss the Importance of Bandage Care
- Review Exercise Restrictions
- Explain the Importance of the Right Diet

What Odors Mean

Clients should know they need to call the practice immediately if they smell any of these odors from their pet's wound:

- **SWEET ODOR:** May indicate bacteria are present
- **FOUL OR NECROTIC ODOR:** May indicate severe infection and necrosis of tissue
- **MOIST ODOR:** May indicate moisture has penetrated the bandage and is degrading the bandage integrity

Instructions that are difficult to understand may be performed incorrectly or not at all, which can complicate and extend patient recovery. Follow these 5 steps to ensure the client fully understands the care his or her pet needs:

1 Explain Every Medication

Clearly describe each medication type (eg, antibiotic, analgesic, anti-inflammatory) to help the client understand how the drug helps the patient. Explain when and how often each medication should be administered. One pill q12h is not the same as 2 pills q24h, so make sure the client understands the difference.

Always review each medication's common side effects (eg, soft stools from antibiotics, increased thirst and

urination from corticosteroids) and the less common but more serious side effects (eg, facial swelling from aminoglycosides such as gentamicin sulfate; vomiting, lethargy, hypersalivation from almost any medication). Make sure the client knows which clinical signs require a phone call to the veterinarian or immediate medical attention. Consider demonstrating medication administration using dry kibble in place of a pill or water in place of a liquid preparation and letting the client practice to ensure he or she is comfortable.

2 Describe the Surgical Site

Show the client the surgical site, unless the wound is covered with a bandage. Discuss the wound color and appearance, including the number and type of stitches, and describe how the wound should appear while healing. If external stitches are in place, the client should schedule an appointment for stitch removal before leaving the practice. Explain that increased redness, discharge, or separation of the wound edges may indicate the incision is infected and the veterinarian should examine the patient as quickly as possible.

A patient will most likely lick the wound as part of normal bathing,

but the client should know excessive licking must be prevented. Sprays or gels flavored with bitter apple or cherry, or other deterrents, can be applied *around* the incision—not over—to help deter licking. Barrier devices such as Elizabethan or BiteNot collars may be necessary if other distractions do not successfully deter the animal from excessively licking the incision. Taking photographs of the wound every few days or weekly can help the client monitor healing progress. The photographs can serve as a reference if healing slows or unexpected changes are noted in the incision's appearance.

3 Discuss the Importance of Bandage Care

If the patient has a bandage over the surgical site, explain the importance of the bandage and make sure the client understands how long it must stay in place. Demonstrate how to check if the bandage has slipped and how it can be repositioned. Explain how to keep the bandage clean and dry, and advise the client to smell the bandage at least daily to check for odor. (See **What Odors Mean.**)

If a limb is bandaged, show the client how to check the toes for warmth, color, and swelling. (See **Figure 1.**) The patient may alert the client

A patient is likely to gain a few pounds during recovery because of a lower activity level, but weight gain can be kept to a minimum as long as treats are not substituted for love.

something is not right by licking or chewing at the bandage site—the client should contact the practice immediately to determine if a bandage check appointment is needed.¹

4 Review Exercise Restrictions

Review the recommendations or restrictions for patient exercise with the client. A patient with an abdominal wound should be prevented from jumping for at least 2 weeks to allow the abdominal wall to heal.

If walking is permitted, explicit instructions—not just *leash walk only*—should be shared verbally and included in the written discharge instructions. The client should walk the patient on a 5-foot leash—attaching a leash as a tether to a 50-foot line in the backyard is *not* leash walking.

If the veterinarian prescribed short, limited walks with a gradual progression to normal activity, give the client a specific timeline (eg, 5-minute walks for the first 2 days, 10-minute walks for the next 2 days, 15-minute walks for the subsequent 2 days, until the patient's normal activity level is reached). Demonstrate how to perform specific rehabilitation exercises on the patient.

Delay bathing any surgical patient for at least 2 weeks to allow the wound to heal properly. Bathing must also be delayed following bandage removal until the sutures have also been removed.

5 Explain the Importance of the Right Diet

Recovery is no time for a patient to diet, but gaining extra weight can be counter-

productive to healing. Explain the need for good nutrition—not excessive nutrition—and consider including specific nutritional recommendations in the written discharge instructions.² For example, cats with urinary obstruction issues may be prescribed a diet specifically formulated to inhibit development of the crystals that caused the obstruction. Other patients with systemic issues (eg, hepatic, cardiac) can be given specially formulated food that will not stress those body systems while they recover.

A patient is likely to gain a few pounds during recovery because of a lower activity level, but weight gain can be kept to a minimum as long as treats are not substituted for love. Remind the client that time spent with the patient is more valuable than any treat.

Conclusion

Use simple, easy-to-understand terminology in all client communications. Clearly explain the purpose, dosage, and potential medication side effects to help ensure patients receive the medications needed to heal. Make sure clients are familiar with the wound site, which helps them better understand the healing process and know when to call the practice when something seems wrong. Discuss the importance of bandage



▲ FIGURE 1 Clients should be shown how to check the pet's toes for warmth, color, and swelling when a limb is bandaged.

care, exercise restrictions, and diet, and clearly explain the details in the written discharge instructions. Proper postoperative at-home care is essential for successful recovery, and the verbal and written instructions given to clients when patients are discharged are key. ■

References

1. Tobias KM, Johnston SA. *Veterinary Surgery: Small Animal*. St. Louis, MO: Elsevier; 2012:226.
2. Holzman G, Raffel T. *Surgical Patient Care for Veterinary Technicians and Nurses*. Ames, IA: Wiley-Blackwell; 2015:174.



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FUN FACT: Teresa has been ballroom dancing for almost 2 years and so far has learned the waltz, foxtrot, rumba, cha-cha-chá, samba, East Coast Swing, West Coast Swing, and tango.

TAKE ACTION

- 1 Create a standard template for surgical discharge instructions that can be customized for each patient.
- 2 Explain each step of the written instructions and demonstrate as many steps as possible before patients are discharged.
- 3 Develop a standard discharge procedure where time is allotted for discussion in a quiet place, without the distraction of the patient in the room. Clients can focus on instructions more carefully when their pet is not present.

NexGard® (afoxolaner) Chewables

CAUTION: Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian.

Description:

NexGard® (afoxolaner) is available in four sizes of beef-flavored, soft chewables for oral administration to dogs and puppies according to their weight. Each chewable is formulated to provide a minimum afoxolaner dosage of 1.14 mg/lb (2.5 mg/kg). Afoxolaner has the chemical composition 1-Naphthalenecarboxamide, 4-[5-[3-chloro-5-(trifluoromethyl)phenyl]-4,5-dihydro-5-(trifluoromethyl)-3-isoxazolyl]-N-[2-oxo-2-[[2,2,2-trifluoroethyl]amino]ethyl].

Indications:

NexGard kills adult fleas and is indicated for the treatment and prevention of flea infestations (*Ctenocephalides felis*) and the treatment and control of Black-legged tick (*Ixodes scapularis*), American Dog tick (*Dermacentor variabilis*), Lone Star tick (*Amblyomma americanum*), and Brown dog tick (*Rhipicephalus sanguineus*) infestations in dogs and puppies 8 weeks of age and older, weighing 4 pounds of body weight or greater, for one month.

Dosage and Administration:

NexGard is given orally once a month, at the minimum dosage of 1.14 mg/lb (2.5 mg/kg).

Dosing Schedule:

Body Weight	Afoxolaner Per Chewable (mg)	Chewables Administered
4.0 to 10.0 lbs.	11.3	One
10.1 to 24.0 lbs.	28.3	One
24.1 to 60.0 lbs.	68	One
60.1 to 121.0 lbs.	136	One
Over 121.0 lbs.	Administer the appropriate combination of chewables	

NexGard can be administered with or without food. Care should be taken that the dog consumes the complete dose, and treated animals should be observed for a few minutes to ensure that part of the dose is not lost or refused. If it is suspected that any of the dose has been lost or if vomiting occurs within two hours of administration, redose with another full dose. If a dose is missed, administer NexGard and resume a monthly dosing schedule.

Flea Treatment and Prevention:

Treatment with NexGard may begin at any time of the year. In areas where fleas are common year-round, monthly treatment with NexGard should continue the entire year without interruption.

To minimize the likelihood of flea reinfestation, it is important to treat all animals within a household with an approved flea control product.

Tick Treatment and Control:

Treatment with NexGard may begin at any time of the year (see **Effectiveness**).

Contraindications:

There are no known contraindications for the use of NexGard.

Warnings:

Not for use in humans. Keep this and all drugs out of the reach of children. In case of accidental ingestion, contact a physician immediately.

Precautions:

The safe use of NexGard in breeding, pregnant or lactating dogs has not been evaluated. Use with caution in dogs with a history of seizures (see **Adverse Reactions**).

Adverse Reactions:

In a well-controlled US field study, which included a total of 333 households and 615 treated dogs (415 administered afoxolaner, 200 administered active control), no serious adverse reactions were observed with NexGard.

Over the 90-day study period, all observations of potential adverse reactions were recorded. The most frequent reactions reported at an incidence of > 1% within any of the three months of observations are presented in the following table. The most frequently reported adverse reaction was vomiting. The occurrence of vomiting was generally self-limiting and of short duration and tended to decrease with subsequent doses in both groups. Five treated dogs experienced anorexia during the study, and two of those dogs experienced anorexia with the first dose but not subsequent doses.

Table 1: Dogs With Adverse Reactions.

	Treatment Group			
	Afoxolaner		Oral active control	
	N ¹	% (n=415)	N ²	% (n=200)
Vomiting (with and without blood)	17	4.1	25	12.5
Dry/Flaky Skin	13	3.1	2	1.0
Diarrhea (with and without blood)	13	3.1	7	3.5
Lethargy	7	1.7	4	2.0
Anorexia	5	1.2	9	4.5

¹Number of dogs in the afoxolaner treatment group with the identified abnormality.

²Number of dogs in the control group with the identified abnormality.

In the US field study, one dog with a history of seizures experienced a seizure on the same day after receiving the first dose and on the same day after receiving the second dose of NexGard. This dog experienced a third seizure one week after receiving the third dose. The dog remained enrolled and completed the study. Another dog with a history of seizures had a seizure 19 days after the third dose of NexGard. The dog remained enrolled and completed the study. A third dog with a history of seizures received NexGard and experienced no seizures throughout the study.

To report suspected adverse events, for technical assistance or to obtain a copy of the MSDS, contact Merial at 1-888-637-4251 or www.merial.com/NexGard. For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS or online at <http://www.fda.gov/AnimalVeterinary/SafetyHealth>.

Mode of Action:

Afoxolaner is a member of the isoxazoline family, shown to bind at a binding site to inhibit insect and acarine ligand-gated chloride channels, in particular those gated by the neurotransmitter gamma-aminobutyric acid (GABA), thereby blocking pre- and post-synaptic transfer of chloride ions across cell membranes. Prolonged afoxolaner-induced hyperexcitation results in uncontrolled activity of the central nervous system and death of insects and acarines. The selective toxicity of afoxolaner between insects and acarines and mammals may be inferred by the differential sensitivity of the insects and acarines' GABA receptors versus mammalian GABA receptors.

Effectiveness:

In a well-controlled laboratory study, NexGard began to kill fleas four hours after initial administration and demonstrated >99% effectiveness at eight hours. In a separate well-controlled laboratory study, NexGard demonstrated 100% effectiveness against adult fleas 24 hours post-infestation for 35 days, and was ≥ 93% effective at 12 hours post-infestation through Day 21, and on Day 35. On Day 28, NexGard was 81.1% effective 12 hours post-infestation. Dogs in both the treated and control groups that were infested with fleas on Day -1 generated flea eggs at 12- and 24-hours post-treatment (0-11 eggs and 1-17 eggs in the NexGard treated dogs, and 4-90 eggs and 0-118 eggs in the control dogs, at 12- and 24-hours, respectively). At subsequent evaluations post-infestation, fleas from dogs in the treated group were essentially unable to produce any eggs (0-1 eggs) while fleas from dogs in the control group continued to produce eggs (1-141 eggs).

In a 90-day US field study conducted in households with existing flea infestations of varying severity, the effectiveness of NexGard against fleas on the Day 30, 60 and 90 visits compared with baseline was 98.0%, 99.7%, and 99.9%, respectively. Collectively, the data from the three studies (two laboratory and one field) demonstrate that NexGard kills fleas before they can lay eggs, thus preventing subsequent flea infestations after the start of treatment of existing flea infestations.

In well-controlled laboratory studies, NexGard demonstrated >97% effectiveness against *Dermacentor variabilis*; >94% effectiveness against *Ixodes scapularis*; and >93% effectiveness against *Rhipicephalus sanguineus*. 48 hours post-infestation for 30 days. At 72 hours post-infestation, NexGard demonstrated >97% effectiveness against *Amblyomma americanum* for 30 days.

Animal Safety:

In a margin of safety study, NexGard was administered orally to 8 to 9-week-old Beagle puppies at 1, 3, and 5 times the maximum exposure dose (6.3 mg/kg) for three treatments every 28 days, followed by three treatments every 14 days, for a total of six treatments. Dogs in the control group were sham-dosed. There were no clinically-relevant effects related to treatment on physical examination, body weight, food consumption, clinical pathology (hematology, clinical chemistries, or coagulation tests), gross pathology, histopathology or organ weights. Vomiting occurred throughout the study, with a similar incidence in the treated and control groups, including one dog in the 5x group that vomited four hours after treatment.

In a well-controlled field study, NexGard was used concomitantly with other medications, such as vaccines, anthelmintics, antibiotics (including topical), steroids, NSAIDs, anesthetics, and antihistamines. No adverse reactions were observed from the concomitant use of NexGard with other medications.

Storage Information:

Store at or below 30°C (86°F) with excursions permitted up to 40°C (104°F).

How Supplied:

NexGard is available in four sizes of beef-flavored soft chewables: 11.3, 28.3, 68 or 136 mg afoxolaner. Each chewable size is available in color-coded packages of 1, 3 or 6 beef-flavored chewables.

NADA 141-406, Approved by FDA

Marketed by: Frontline Vet Labs™, a Division of Merial, Inc.
Duluth, GA 30096-4640 USA

Made in Brazil.

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1050-4493-03
Rev. 1/2015

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