

# Vetted<sup>TM</sup>

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positivity **p10**

Worst.  
Idea.  
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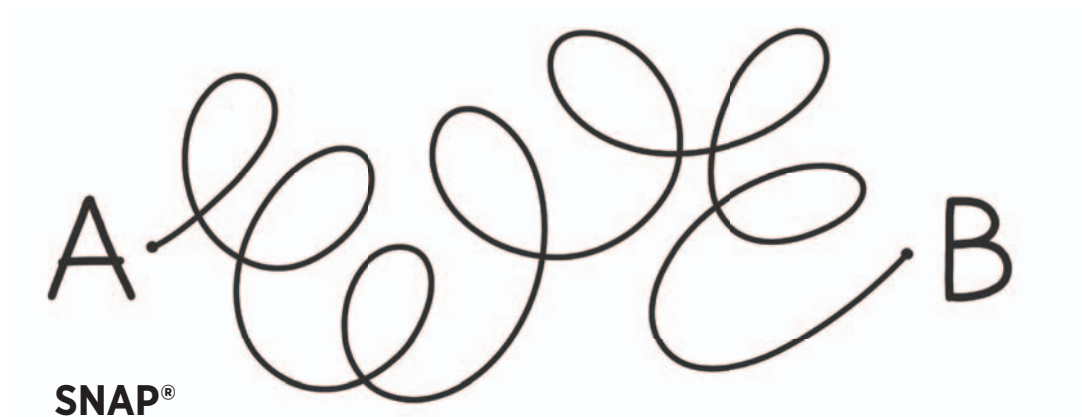
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**DETECT. PREVENT. TREAT.**

**zoetis**

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August 2016

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dvm360  
leadership  
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Vet Life Hacks

## Vet life hacks



We serve up a selection of hacks for better communication, better care and a better bottom line.

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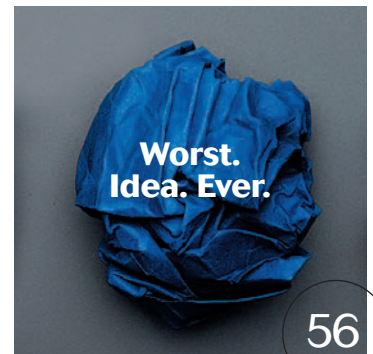
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Worst.  
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“Don't ride the drama train.

If you want your team to leave their emotions at the door ... you should too.”

## #vetlifehacks

The Veterinary Hospital Managers Association wanted in on our life hack idea, so they shared exclusive survey results on practice management “hacks” or best-kept secrets from VHMA members.

VHMA members were asked: If you had to give advice to a new manager in a single statement, what is your best-kept secret that has the biggest impact on your team? One answer appears above; find more at [dvm360.com/practicehacks](http://dvm360.com/practicehacks).

We also asked our expert CVC speakers and attendees to tell us their brilliant-as-all-get-out, can't-live-without-it, super sweet life hack that makes veterinary practice just that much easier. They gave us insider tips on ...



- A rehab trick to teach clients who are caring for arthritic pets
- A clinical super-tip about a peripheral catheter
- A neat idea in pharmacology
- A hack for the exam room (hint, use your assistant!)
- A method for better communication with your team.

For more #vetlifehacks, go to [dvm360.com/CVChacks](http://dvm360.com/CVChacks).

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# First-Time Treatment Success: What You and Your Patients Deserve

Pet owners don't like to see their dog suffer. So when they walk into your clinic with a dog that has a bacterial skin infection, they expect to receive the right solution to clear the infection quickly and on the first try.

Achieving first-time treatment success for skin infections is also important to the veterinary community—because healthy pets mean happy clients. A recent study found that first-time treatment success was the most important factor for veterinarians when selecting an antibiotic treatment, even over clinical performance and safety profile.<sup>1</sup>

## Studies Support First-Time Treatment Success with CONVENIA® (cefovecin sodium)

The Food and Drug Administration (FDA) approved CONVENIA in 2008. Since then, CONVENIA has provided veterinarians with the only injectable antibiotic that achieves a high rate of first-time treatment success and an assured 14-day course of therapy.

The original efficacy study to receive FDA approval showed that 86% of the dogs treated with CONVENIA only required one injection of the antibiotic to clear the skin infection. Zoetis is committed to continued research to demonstrate efficacy and has conducted four additional studies to further support the rate of first-time treatment success CONVENIA provides.

Each study defined first-time treatment success as an instance when a dog received only one injection of CONVENIA in a 30-day period. The injection is the clinical equivalent to 14 days of

oral antibiotics. The population for each study varied from general practice patients to shelter dogs. The studies also had a wide range of participants, with the largest including more than 11,000 dogs. Each of the four studies showed that CONVENIA has a first-time success rate higher than the original pivotal data study. The graph below provides a summary comparing each study.<sup>2</sup>

“We were very pleased to learn in our efficacy study for approval that 86% of dogs needed only one injection of CONVENIA to resolve their infection. Now, all these years later, we have additional data to support that this is still the case,” said Amy Trettien, DVM, senior manager, U.S. Companion Animal Veterinary Speciality Operations, Zoetis.

## Why First-Time Treatment Success Matters

A two-year-old female German Shorthaired Pointer was experiencing red, open lesions on her skin for one to two weeks. She presented to the veterinarian, was diagnosed with generalized pyoderma and treated with CONVENIA.<sup>4</sup>

Within 24 hours, the skin was already beginning to clear. The photos demonstrate that after a single injection of CONVENIA, the pyoderma was resolved.

**This case study of first-time treatment success illustrates one reason why 96% of pet owners would use CONVENIA again if recommended by their veterinarian.<sup>5</sup>**

Date	Data Source	Type of Study	Population of Dogs	Dogs Receiving One Injection of CONVENIA
Published in 2008	Cefovecin for Treating Canine Skin Infections <sup>3</sup>	Prospective N=235	Pivotal Study	86%
2013	CAPNA Client Acceptance Trial	Retrospective N=306	General Practice	96%
2013–2014	Give a Dog a Shot CONVENIA Shelter Program	Retrospective N=40	Shelter	90%
2014–2015	You Call the Shots Reimbursement	Data Analysis of Reimbursement Program N=11,519	All	90%
2014–2015	Speed of Response	Prospective N=46	VCA General Practice Acute Moist Dermatitis	94%

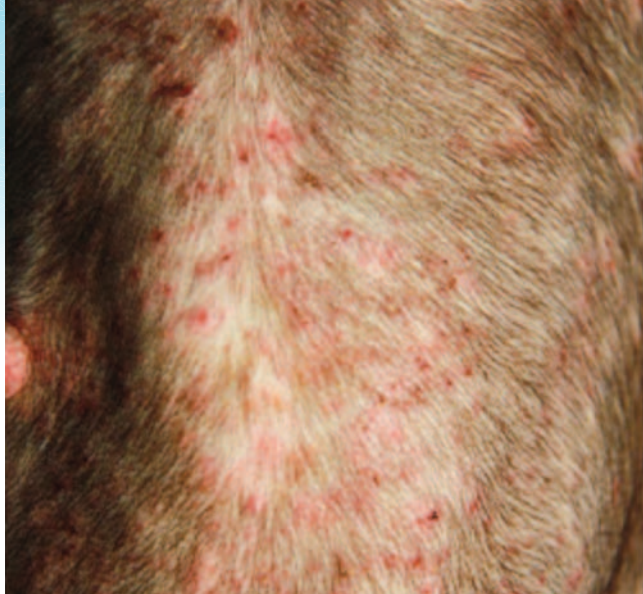


Photo credit: David Bird, DVM

Daisy Lewis—Day 0



Daisy Lewis—Day 15

“First-time treatment success is important, above all, because we want our canine patients to feel better fast. Research shows CONVENIA delivers an assured course of treatment with sustained concentrations above the MIC at the site of the infection in as quickly as 2 hours,” said Trettien.<sup>6</sup>

In addition to treating infections quickly, there are other benefits to first-time treatment success. Successful treatment with one dose, administered in the veterinary clinic, means that there will be fewer missed doses and potentially less need to re-treat with additional courses of antibiotics.

Compliance is also an issue when it comes to antibiotic stewardship. Choosing CONVENIA for your canine patients who present with bacterial skin infections will give you full confidence that your patient received a full 14-day course of antibiotics because you administered it. There’s

no wondering if treatment failure is the result of less than perfect owner compliance with missed doses during a multi-week course of antibiotics, or if you are dealing with a bacterial skin infection that is resistant to a particular class of antibiotics.

CONVENIA provides an assured course of treatment and guaranteed compliance; and as the studies show, a high rate of first-time treatment success for your patients. This leads to peace of mind for your clients and control of the antibiotic therapy for you.

Visit [www.convenia.com/vetted](http://www.convenia.com/vetted) to learn more about CONVENIA for your canine patients with bacterial skin infections. To learn more about the commitment Zoetis has made to antibiotic stewardship, visit [responsibleantibiotics.com/vetted](http://responsibleantibiotics.com/vetted).

#### IMPORTANT SAFETY INFORMATION:

People with known hypersensitivity to penicillin or cephalosporins should avoid exposure to CONVENIA. Do not use in dogs or cats with a history of allergic reactions to penicillins or cephalosporins. Side effects for both dogs and cats include vomiting, diarrhea, decreased appetite/anorexia and lethargy. See Brief Summary of Prescribing Information on page 06.



<sup>1</sup> Zoetis Data on file. U.S. AIF DIARY Study.

<sup>2</sup> Wright AK, Fadok V, Amodie D. First treatment success with injectable cefovecin sodium in dogs for superficial pyoderma, wounds, and abscesses in different dog populations. Presented at: ISPPR 21st Annual International Meeting; May 21–25, 2016; Washington, DC.

<sup>3</sup> Six R, Cherni J, Chesebrough R, et al. Efficacy and safety of cefovecin in treating bacterial folliculitis, abscesses, or infected wounds in dogs. *J Am Vet Med Assoc*. 2008;233(3):433-439.

<sup>4</sup> Case included an initial skin cleansing with a diluted topical antiseptic.

<sup>5</sup> Data on file. Convenia You Call the Shots Pet Owner Program, 2014; Zoetis Inc.

<sup>6</sup> Stegemann MR, Sherington J, Blanchflower S. Pharmacokinetics and pharmacodynamics of cefovecin in dogs. *J Vet Pharmacol Ther*. 2006;29(6):501-511.

# THE PICKS

(what we care about now)



GETTY IMAGES

## 3 reasons cat owners say “no” to dental procedures

“Dentistry hasn’t really grown that much in the past 20 years for all the talking we’ve done at meetings and in magazines,” says Dr. Karen Felsted, owner of PantheraT Consulting in Dallas, Texas. *Harsh.* The reasons, she thinks, are simple but powerful. Consider these three common cat-owner concerns that hold them back from agreeing to needed feline dental work.

**PROBLEM 1:** Cat owners are reluctant to bring their cats in for anything.

**PROBLEM 2:** For pet owners, anesthesia is scary.

**PROBLEM 3:** Cat owners can be more sensitive to treatment costs than dog owners.

Want some solutions? Visit [dvm360.com/catdental](http://dvm360.com/catdental).

### Brief Summary of Prescribing Information

## convenia®

(cefovecin sodium)

Antimicrobial for Subcutaneous Injection in Dogs and Cats Only

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

#### INDICATIONS:

##### Dogs

CONVENIA is indicated for the treatment of skin infections (secondary superficial pyoderma, abscesses, and wounds) in dogs caused by susceptible strains of *Staphylococcus intermedius* and *Streptococcus canis* (Group G).

##### Cats

CONVENIA is indicated for the treatment of skin infections (wounds and abscesses) in cats caused by susceptible strains of *Pasteurella multocida*.

**CONTRAINDICATIONS:** CONVENIA is contraindicated in dogs and cats with known allergy to cefovecin or to  $\beta$ -lactam (penicillins and cephalosporins) group antimicrobials. Anaphylaxis has been reported with the use of this product in foreign market experience. If an allergic reaction or anaphylaxis occurs, CONVENIA should not be administered again and appropriate therapy should be instituted. Anaphylaxis may require treatment with epinephrine and other emergency measures, including oxygen, intravenous fluids, intravenous antihistamine, corticosteroids, and airway management, as clinically indicated. Adverse reactions may require prolonged treatment due to the prolonged systemic drug clearance (65 days).

**WARNINGS:** Not for use in humans. Keep this and all drugs out of reach of children. Consult a physician in case of accidental human exposure. For subcutaneous use in dogs and cats only. Antimicrobial drugs, including penicillins and cephalosporins, can cause allergic reactions in sensitized individuals. To minimize the possibility of allergic reactions, those handling such antimicrobials, including cefovecin, are advised to avoid direct contact of the product with the skin and mucous membranes.

**PRECAUTIONS:** Prescribing antibacterial drugs in the absence of a proven or strongly suspected bacterial infection is unlikely to provide benefit to treated animals and may increase the risk of the development of drug-resistant animal pathogens.

The safe use of CONVENIA in dogs or cats less than 4 months of age and in breeding or lactating animals has not been determined. Safety has not been established for IM or IV administration. The long-term effects on injection sites have not been determined. CONVENIA is slowly eliminated from the body, approximately 65 days is needed to eliminate 97% of the administered dose from the body. Animals experiencing an adverse reaction may need to be monitored for this duration.

CONVENIA has been shown in an experimental *in vitro* system to result in an increase in free concentrations of carprofen, furosemide, doxycycline,

and ketoconazole. Concurrent use of these or other drugs that have a high degree of protein-binding (e.g. NSAIDs, propofol, cardiac, anticonvulsant, and behavioral medications) may compete with cefovecin-binding and cause adverse reactions.

Positive direct Coombs' test results and false positive reactions for glucose in the urine have been reported during treatment with some cephalosporin antimicrobials. Cephalosporin antimicrobials may also cause falsely elevated urine protein determinations. Some antimicrobials, including cephalosporins, can cause lowered albumin values due to interference with certain testing methods.

Occasionally, cephalosporins and NSAIDs have been associated with myelotoxicity, thereby creating a toxic neutropenia<sup>4</sup>. Other hematological reactions seen with cephalosporins include neutropenia, anemia, hypoprothrombinemia, thrombocytopenia, prolonged prothrombin time (PT) and partial thromboplastin time (PTT), platelet dysfunction and transient increases in serum aminotransferases.

#### ADVERSE REACTIONS:

##### Dogs

A total of 320 dogs, ranging in age from 8 weeks to 19 years, were included in a field study safety analysis. Adverse reactions reported in dogs treated with CONVENIA and the active control are summarized in Table 2.

**Table 2: Number of Dogs\* with Adverse Reactions Reported During the Field Study with CONVENIA.**

Adverse Reaction	CONVENIA (n=157)	Active Control (n=163)
Lethargy	2	7
Anorexia/Decreased Appetite	5	8
Vomiting	6	12
Diarrhea	6	7
Blood in Feces	1	2
Dehydration	0	1
Flatulence	1	0
Increased Borborygmi	1	0

\*Some dogs may have experienced more than one adverse reaction or more than one occurrence of the same adverse reaction during the study.

Mild to moderate elevations in serum  $\gamma$ -glutamyl transferase or serum alanine aminotransferase were noted post-treatment in several of the CONVENIA-treated dogs. No clinical abnormalities were noted with these findings.

One CONVENIA-treated dog in a separate field study experienced diarrhea post-treatment lasting 4 weeks. The diarrhea resolved.

##### Cats

A total of 291 cats, ranging in age from 2.4 months (1 cat) to 21 years, were included in the field study safety analysis. Adverse reactions reported in cats treated with CONVENIA and the active control are summarized in Table 3.

**Table 3: Number of Cats\* with Adverse Reactions Reported During the Field Study with CONVENIA.**

Adverse Reaction	CONVENIA (n=157)	Active Control (n=163)
Vomiting	10	14
Diarrhea	7	26
Anorexia/Decreased Appetite	6	6
Lethargy	6	6
Hyper/Acting Strange	1	1
Inappropriate Urination	1	0

\*Some cats may have experienced more than one adverse reaction or more than one occurrence of the same adverse reaction during the study.

Four CONVENIA cases had mildly elevated post-study ALT (1 case was elevated pre-study). No clinical abnormalities were noted with these findings.

Twenty-four CONVENIA cases had normal pre-study BUN values and elevated post-study BUN values (37–39 mg/dL post-study). There were 6 CONVENIA cases with normal pre- and mildly to moderately elevated post-study creatinine values. Two of these cases also had an elevated post-study BUN. No clinical abnormalities were noted with these findings.

One CONVENIA-treated cat in a separate field study experienced diarrhea post-treatment lasting 42 days. The diarrhea resolved.

**FOREIGN MARKET EXPERIENCE:** The following adverse events were reported voluntarily during post-approval use of the product in dogs and cats in foreign markets: death, tremors/ataxia, seizures, anaphylaxis, acute pulmonary edema, facial edema, injection site reactions (alopecia, scabs, necrosis, and erythema), hemolytic anemia, salivation, pruritus, lethargy, vomiting, diarrhea, and inappetence.

For a copy of the Material Safety Data Sheet, (MSDS) or to report a suspected adverse reaction call Zoetis Inc. at 1-888-963-8471.

#### STORAGE INFORMATION:

Store the powder and the reconstituted product in the original carton, refrigerated at 2° to 8° C (36° to 46° F). Use the entire contents of the vial within 56 days of reconstitution. PROTECT FROM LIGHT. After each use it is important to return the unused portion back to the refrigerator in the original carton. As with other cephalosporins, the color of the solution may vary from clear to amber at reconstitution and may darken over time. If stored as recommended, solution color does not adversely affect potency.

#### HOW SUPPLIED:

CONVENIA is available as a 10 mL multi-use vial containing 800 milligrams of cefovecin as a lyophilized cake.

NADA# 141-285, Approved by FDA

**zoetis**

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Kalamazoo, MI 49007

January 2013  
PAA035845A&P

# Glow show

Nature provides the flash for photos of fireflies in Japan.

While most are content to catch fireflies with their hands, a group of photographers in Japan has developed a more sophisticated and lasting way of capturing the glowing beetles. During the early summer months, photographers set up their cameras in various locations throughout Japan and wait for fireflies to commence their spectacular mating ritual. According to an article from *National*

*Geographic*, fireflies flash in specific patterns. Males signal what species they are and that they are males. Females only respond to male fireflies of the same species.

"Once she finds the right male, their flashing conversation can go on for hours," the article says, "partly because the ladies play hard to get, responding only to every fifth flash or so."

Eventually the two fireflies find each other and mate

tail-to-tail with the lights off. Then they go their separate ways, picking new partners the following night.

Don't go to Japan and expect the landscape to look like a glowing connect-the-dots game, a *Colossal* article warns. Photos like the one below are composites, meaning the photographers have combined 10 to 200 of the same frame, so what you see here can't be seen with the naked eye.

Check out more photos at [dvm360.com/glowshow](http://dvm360.com/glowshow).



## New tricks for tired old senior diagnostic discussions

By Roger Zinn, CVPM

Old. Geriatric. Senior! How do these words make you feel? It's time to reframe your client conversations with these steps:

**No. 1: Stop using bad language.** When my practice, Animal Center of the Village in Houston, launched our Comprehensive Age Related Evaluation (CARE) program, I asked my team how they felt about the words "old," "geriatric" and "senior." Every employee associated some type of negative connotation with these words. Age is a sensitive subject, even though most people claim it doesn't matter to them.

**No. 2: Reframe and rephrase.** Try using phrases such as, "I see that Toby is now entering our more mature years. And we have wonderful resources available now to help us track changes that could affect Toby's health. I would love the opportunity to discuss these with you so that we can create a plan that works both for you and for Toby's continual care." Here's the key: The statement is polite, nonthreatening and doesn't feel like a sales pitch. You're asking to talk to them about this topic, showing you're here for the pet and for the client.

**No. 3: Don't vomit numbers.** Remember, you're advocating for the patient. Focus on the value of the diagnostics you're recommending. Then offer your estimate or medical care plan. You can move on to cost and options for payment once you've talked about the care.

*Zinn is a 2016 dvm360/VHMA Practice Manager of the Year contest entrant.*



Visit [dvm360.com/PMOY](http://dvm360.com/PMOY) to read more stories from entrants:

- > Managing an associate's chronic anxiety
- > Handling a doctor's maternity leave
- > And more.



**BONUS TIP:** Spread out the services and care you recommend. For example, if you move from annual to twice-a-year visits, you can spread the financial commitments across the year.



## From the leader in canine influenza vaccines **Canine Influenza Vaccine H3N2\***

Recommended for dogs 6 weeks or older as an aid in the control of disease associated with canine influenza virus H3N2 infection

- A minimum of 2 doses is required for primary immunization
- Initial dose may be given at 6 weeks of age or older. A second dose is given 2 to 4 weeks later
- Annual revaccination is recommended

## Canine Infectious Respiratory Disease Complex Vaccines

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- Canine Influenza Vaccine H3N2
- Nobivac® Canine Flu H3N8

### Vaccines for Upper Respiratory Tract Infections:

- Nobivac® Intra-Trac® KC
- Nobivac® Intra-Trac®<sub>3</sub>
- Nobivac® Intra-Trac®<sub>3</sub> ADT

	Bordetella (Avirulent live)	Parainfluenza (MLV)	Adenovirus Type 2 (MLV)	Canine Influenza Virus (Killed)	Non-adjuvanted
				●	
				●	
	●	●			●
	●	●	●		●
	●	●	●		●

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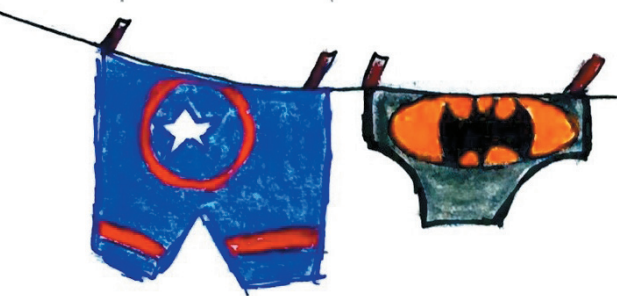
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PERPETUAL INNOVATION

**MERCK**  
Animal Health



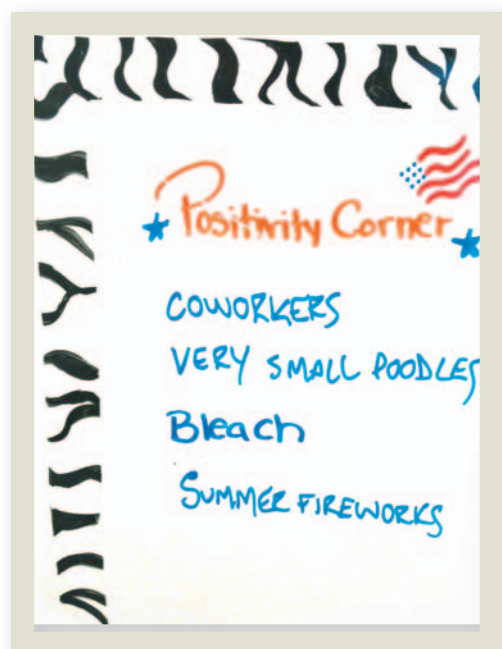
## You guys, positivity starts with your panties

Consider this discreet team-building tip from Shawn Finch, DVM:

"At the practice I work at we dedicated a small corner of the whiteboard to a 'Positivity Corner.' Team members could add to the list of random things that make us happy. They're mostly work-related, but anything is good."

"Every morning, a team member volunteered a (ahem) verbal description of their underwear pattern, and we used that description to design the border of the Positivity Corner."

"We were all so amused with ourselves. And I truly believe that as valuable as a positive outlook is, the real reason the Positivity Corner survived so long is because we just thought we were hilarious."

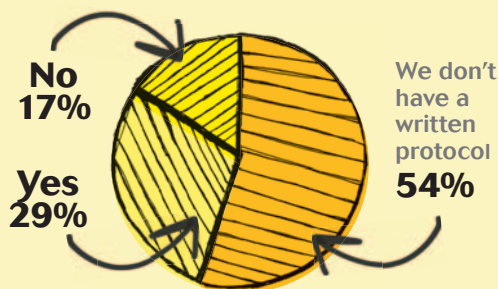


## Bad behavior

New data from the dvm360 Spectrum of Care Survey shows how deep (or how shallow) protocols and client communication issues are embedded in today's veterinary hospitals.

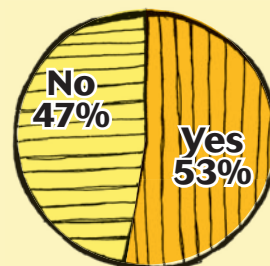


Is it part of your written clinic protocol to discuss potential behavior problems as a part of the patient's history at every wellness appointment?



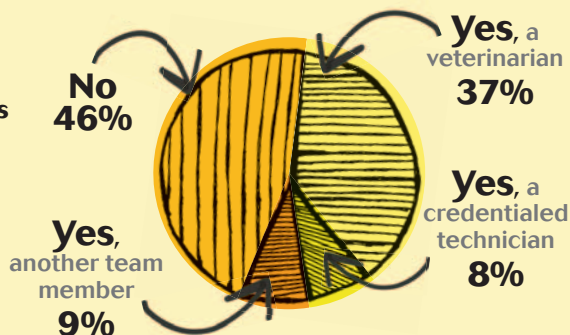
Some doctors and veterinary technicians make a point of asking about behavior problems in some way at every visit (hint, hint!) ...

Do you have a behaviorist in your area to whom you feel confident referring patients with behavior issues?



There are very few board-certified behaviorists in the country. For dogs, some of you will fall back on a favorite dog trainer in the area. For cats, maybe you ask a local feline-only practitioner.

Do you have someone in your practice who's particularly passionate about talking to clients about behavior issues?



Almost half of you say no one in your practice is a strong advocate for behavior and client education about behavior. With behavior the major reason for pet relinquishment, is it time to see if you can find a brave educator to heal the human-animal bond? Check out more Spectrum of Care data at [dvm360.com/Spectrum](http://dvm360.com/Spectrum).



In allergic skin disease,

# Avoid the cycle of itch—start with fast, safe relief<sup>1-4</sup>

- **Fast and effective**
  - Itch relief begins within 4 hours; effectively controls itch within 24 hours<sup>1,5</sup>
- **Safe**
  - Without many of the side effects associated with steroids<sup>5</sup>
  - Can be used with many other drugs, including anti-infectives, parasiticides, antifungals, NSAIDs and allergen immunotherapy<sup>2</sup>
- **Allows diagnostic testing**, so you can give dogs relief and restore the quality of life while you determine the cause of the itch<sup>2,6</sup>

**To learn more, please visit [www.APOQUEL.com](http://www.APOQUEL.com)**

## Indications

Control of pruritus associated with allergic dermatitis and control of atopic dermatitis in dogs at least 12 months of age.

## Important Safety Information

Do not use APOQUEL in dogs less than 12 months of age or those with serious infections. APOQUEL may increase the chances of developing serious infections, and may cause existing parasitic skin infestations or pre-existing cancers to get worse. APOQUEL has not been tested in dogs receiving some medications including some commonly used to treat skin conditions such as corticosteroids and cyclosporines. Do not use in breeding, pregnant, or lactating dogs. Most common side effects are vomiting and diarrhea. APOQUEL has been used safely with many common medications including parasiticides, antibiotics and vaccines.

**References:** **1.** Gadeyne C, Little P, King VL, Edwards N, Davis K, Stegemann MR. Efficacy of oclacitinib (Apoquel<sup>®</sup>) compared with prednisolone for the control of pruritus and clinical signs associated with allergic dermatitis in client-owned dogs in Australia. *Vet Dermatol.* 2014;25:512-e86. **2.** Cosgrove SB, Cleaver DM, King VL, Gilmer AR, Daniels AE, Wren JA, Stegemann MR. Long-term compassionate use of oclacitinib in dogs with atopic and allergic skin disease: safety, efficacy and quality of life. *Vet Dermatol.* 2015;26(3):171-179. **3.** Cosgrove SB, Wren JA, Cleaver DM, et al. A blinded, randomized, placebo-controlled trial of the efficacy and safety of the Janus kinase inhibitor oclacitinib (Apoquel<sup>®</sup>) in client-owned dogs with atopic dermatitis. *Vet Dermatol.* 2013;24:587-597. **4.** Marsella R, Sousa CA, Gonzales AJ, Fadok VA. Current understanding of the pathophysiologic mechanisms of canine atopic dermatitis. *JAVMA.* 2012;241(2):194-207. **5.** Cosgrove SB, Wren JA, Cleaver M, et al. Efficacy and safety of oclacitinib for the control of pruritus and associated skin lesions in dogs with canine allergic dermatitis. *Vet Dermatol.* 2013;24(5):479-e114. **6.** Aleo MM, Galvan EA, Fleck JT, et al. Effects of oclacitinib and prednisolone on skin test sensitivity [abstract]. *Vet Dermatol.* 2013;24(3):297.

For more information, please see Brief Summary of full Prescribing Information on page 13.



### No surgery at the dinner table

I started my very own practice straight out of veterinary school. I learned everything I could about small business management, and then a companion animal-oriented ambulatory practice. I was informed that I was *not* to perform surgery on our kitchen table—even in the mid-1980s that would have been inappropriate.

### To the penthouse

My spouse Sharon and I actually live on the premises of our veterinary hospital. We call it the “penthouse”—never mind that it’s only the second floor. But we really try to separate time at work from time at home. While it may sound like a tiny thing, the first thing I do at the end of the workday is change my clothes and embrace my “I am home” persona.

### Sick or well

Sick pet visits are often more mentally challenging, and thus more interesting, than well pet visits. I certainly don’t enjoy seeing a pet suffering in any way, but problem-solving is one of the most satisfying activities I can think of. Solving the problem of why the pet is in front of me, and what is going on with them, really puts me and my team totally on our game. Not knowing what’s going on is so very stressful for pet parents. Sometimes just knowing what is going on, even if the news is not good, is better than uncertainty. It opens the door to plan for what comes next. And follow-ups are the very most important service we can provide. Every single patient needs and deserves to have the next visit booked *before* that client leaves.

## Putting pain behind her

By Robin Downing DVM, DAAPM, DACVSMR, CVPP, CCRP

**D**r. Robin Downing is hard to track down—she’s been busy defending a bioethics thesis in between speaking, writing and running her specialty practice near Boulder, Colorado. All this is remarkable in itself, but until last year, Dr. Downing was also dealing with bone-crushing spinal pain that made getting out of bed impossible. It’s no wonder she’s a staunch advocate for pets in pain.

*Psst!* Check out Dr. Downing’s acute pain management pyramid on **page 28**.



“I train with a Masters swimming team (which just means you’ve ‘aged out’ of NCAA). While I’m in the ‘old, slow, chubby, middle-aged lady’ lane, the next lane in the pool is occupied by the really fast folks, one of whom is Susan von der Lippe, a three-time Olympian. She’s an inspiration!”

Find more brilliance at [dvm360.com/Downing](http://dvm360.com/Downing) and be sure to catch her at CVC San Diego (go to [thecvc.com/sd](http://thecvc.com/sd) for more info on the talks she’ll be giving—and, yay! Welcome back, Dr. Downing.)



# apoquel<sup>®</sup>

## (oclacitinib tablet)

3.6 mg

5.4 mg

16 mg

### Brief Summary of Prescribing Information

#### For oral use in dogs only

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

**Indications:** Control of pruritus associated with allergic dermatitis and control of atopic dermatitis in dogs at least 12 months of age.

**Dosage and Administration:** The dose of APOQUEL (oclacitinib maleate) tablets is 0.18 to 0.27 mg oclacitinib/lb (0.4 to 0.6 mg oclacitinib/kg) body weight, administered orally, twice daily for up to 14 days, and then administered once daily for maintenance therapy. APOQUEL may be administered with or without food.

#### Dosing Chart

Weight Range (in lb)		Weight Range (in kg)		Number of Tablets to be Administered		
Low	High	Low	High	3.6 mg Tablets	5.4 mg Tablets	16 mg Tablets
6.6	9.9	3.0	4.4	<b>0.5</b>	-	-
10.0	14.9	4.5	5.9	-	<b>0.5</b>	-
15.0	19.9	6.0	8.9	<b>1</b>	-	-
20.0	29.9	9.0	13.4	-	<b>1</b>	-
30.0	44.9	13.5	19.9	-	-	<b>0.5</b>
45.0	59.9	20.0	26.9	-	<b>2</b>	-
60.0	89.9	27.0	39.9	-	-	<b>1</b>
90.0	129.9	40.0	54.9	-	-	<b>1.5</b>
130.0	175.9	55.0	80.0	-	-	<b>2</b>

#### Warnings:

APOQUEL is not for use in dogs less than 12 months of age (see **Animal Safety**).

APOQUEL is not for use in dogs with serious infections.

APOQUEL may increase susceptibility to infection, including demodicosis, and exacerbate neoplastic conditions (see **Adverse Reactions** and **Animal Safety**).

#### Human Warnings:

This product is not for human use. Keep this and all drugs out of reach of children. For use in dogs only. Wash hands immediately after handling the tablets. In case of accidental eye contact, flush immediately with water or saline for at least 15 minutes and then seek medical attention. In case of accidental ingestion, seek medical attention immediately.

#### Precautions:

APOQUEL is not for use in breeding dogs, or pregnant or lactating bitches.

The use of APOQUEL has not been evaluated in combination with glucocorticoids, cyclosporine, or other systemic immunosuppressive agents.

Dogs receiving APOQUEL should be monitored for the development of infections, including demodicosis, and neoplasia.

#### Adverse Reactions:

##### Control of Atopic Dermatitis

In a masked field study to assess the effectiveness and safety of oclacitinib for the control of atopic dermatitis in dogs, 152 dogs treated with APOQUEL and 147 dogs treated with placebo (vehicle control) were evaluated for safety. The majority of dogs in the placebo group withdrew from the 112-day study by Day 16. Adverse reactions reported (and percent of dogs affected) during Days 0-16 included diarrhea (4.6% APOQUEL, 3.4% placebo), vomiting (3.9% APOQUEL, 4.1% placebo), anorexia (2.6% APOQUEL, 0% placebo), new cutaneous or subcutaneous lump (2.6% APOQUEL, 2.7% placebo), and lethargy (2.0% APOQUEL, 1.4% placebo). In most cases, diarrhea, vomiting, anorexia, and lethargy spontaneously resolved with continued dosing. Dogs on APOQUEL had decreased leukocytes (neutrophil, eosinophil, and monocyte counts) and serum globulin, and increased cholesterol and lipase compared to the placebo group but group means remained within the normal range. Mean lymphocyte counts were transiently increased at Day 14 in the APOQUEL group.

Dogs that withdrew from the masked field study could enter an unmasked study where all dogs received APOQUEL. Between the masked and unmasked study, 283 dogs received at least one dose of APOQUEL. Of these 283 dogs, two dogs were withdrawn from study due to suspected treatment-related adverse reactions: one dog that had an intense flare-up of dermatitis and severe secondary pyoderma after 19 days of APOQUEL administration, and one dog that developed generalized demodicosis after 28 days of APOQUEL administration. Two other dogs on APOQUEL were withdrawn from study due to suspected or confirmed malignant neoplasia and subsequently euthanized, including one dog that developed signs associated with a heart base mass after 21 days of APOQUEL administration, and one dog that developed a Grade III mast cell tumor after 60 days of APOQUEL administration. One of the 147 dogs in the placebo group developed a Grade I mast cell tumor and was withdrawn from the masked study. Additional dogs receiving APOQUEL were hospitalized for diagnosis and treatment of pneumonia (one dog), transient bloody vomiting and stool (one dog), and cystitis with urolithiasis (one dog).

In the 283 dogs that received APOQUEL, the following additional clinical signs were reported after beginning APOQUEL (percentage of dogs with at least one report of the clinical sign as a non-pre-existing finding): pyoderma (12.0%), non-specified dermal lumps (12.0%), otitis (9.9%), vomiting (9.2%), diarrhea (6.0%), histiocytoma (3.9%), cystitis (3.5%), anorexia (3.2%), lethargy (2.8%), yeast skin infections (2.5%), pododermatitis (2.5%), lipoma (2.1%), polydipsia (1.4%), lymphadenopathy (1.1%), nausea (1.1%), increased appetite (1.1%), aggression (1.1%), and weight loss (0.7).

##### Control of Pruritus Associated with Allergic Dermatitis

In a masked field study to assess the effectiveness and safety of oclacitinib for the control of pruritus associated with allergic dermatitis in dogs, 216 dogs treated with APOQUEL and 220 dogs treated with placebo (vehicle control) were evaluated for safety. During the 30-day study, there were no fatalities and no adverse reactions requiring hospital care. Adverse reactions reported (and percent of dogs affected) during Days 0-7 included diarrhea (2.3% APOQUEL, 0.9% placebo), vomiting (2.3% APOQUEL, 1.8% placebo), lethargy (1.8% APOQUEL, 1.4% placebo), anorexia (1.4% APOQUEL, 0% placebo), and polydipsia (1.4% APOQUEL, 0% placebo). In most of these cases, signs spontaneously resolved with continued dosing. Five APOQUEL group dogs were withdrawn from study because of: darkening areas of skin and fur (1 dog); diarrhea (1 dog); fever, lethargy and cystitis (1 dog); an inflamed footpad and vomiting (1 dog); and diarrhea, vomiting, and lethargy (1 dog). Dogs in the APOQUEL group had a slight decrease in mean white blood cell counts (neutrophil, eosinophil, and monocyte counts) that remained within the normal reference range. Mean lymphocyte count for dogs in the APOQUEL group increased at Day 7, but returned to pretreatment levels by study end without a break in APOQUEL administration. Serum cholesterol increased in 25% of APOQUEL group dogs, but mean cholesterol remained within the reference range.

##### Continuation Field Study

After completing APOQUEL field studies, 239 dogs enrolled in an unmasked (no placebo control), continuation therapy study receiving APOQUEL for an unrestricted period of time. Mean time on this study was 372 days (range 1 to 610 days). Of these 239 dogs, one dog developed demodicosis following 273 days of APOQUEL administration. One dog developed dermal pigmented viral plaques following 266 days of APOQUEL administration. One dog developed a moderately severe bronchopneumonia after 272 days of APOQUEL administration; this infection resolved with antimicrobial treatment and temporary discontinuation of APOQUEL. One dog was euthanized after developing abdominal ascites and pleural effusion of unknown etiology after 450 days of APOQUEL administration. Six dogs were euthanized because of suspected malignant neoplasms: including thoracic metastatic, abdominal metastatic, splenic, frontal sinus, and intracranial neoplasms, and transitional cell carcinoma after 17, 120, 175, 49, 141, and 286 days of APOQUEL administration, respectively. Two dogs each developed a Grade II mast cell tumor after 52 and 91 days of APOQUEL administration, respectively. One dog developed low grade B-cell lymphoma after 392 days of APOQUEL administration. Two dogs each developed an apocrine gland adenocarcinoma (one dermal, one anal sac) after approximately 210 and 320 days of APOQUEL administration, respectively. One dog developed a low grade oral spindle cell sarcoma after 320 days of APOQUEL administration.

To report suspected adverse events, for technical assistance or to obtain a copy of the MSDS, contact Zoetis Inc. at 1-888-963-8471 or [www.zoetis.com](http://www.zoetis.com).

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>.

##### Storage Conditions:

APOQUEL should be stored at controlled room temperature between 20° to 25°C (68° to 77°F) with excursions between 15° to 40°C (59° to 104°F).

##### How Supplied:

APOQUEL tablets contain 3.6 mg, 5.4 mg, or 16 mg of oclacitinib as oclacitinib maleate per tablet. Each strength tablets are packaged in 20 and 100 count bottles. Each tablet is scored and marked with AQ and either an S, M, or L that correspond to the different tablet strengths on both sides.

NADA #141-345, Approved by FDA

Made in Italy

**zoetis**

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Kalamazoo, MI 49007

February 2013

428007800A&P

# Veterinary life

## Rein in pain

### Help clients administer meds properly

To increase medicine administration compliance (especially long-term), offer owners day-of-the-week medicine containers and pill splitters, if needed. That way, owners can quickly double-check if they gave their pets' medicines appropriately. And when others besides the owners are caring for the pets, the containers make administering medicine easier and more accurate.

*Dr. Andrea Wade La Rau, s Portland, Oregon*

### Tips to talk it out ...

- > "Clients always say, 'But they don't cry or whine!' I always ask the client if they have any aches and pains, and they will say, 'My knees, my back, my neck ...' And I say, 'Did you walk in the door complaining about it?' When they say no, I explain it's the same with our pets. They don't have to cry out all day long to prove they're painful. They're stronger and tougher than we are, and they don't complain and beg for attention on social media like we do!"

On a scale from 1-10, these pain management hacks are an 11.

### ... Or, let the drugs do the talking

- > "We recommend a two-week trial of medications. Once pet owners see the difference, they are more willing to pay for medication. If they don't see a difference, discontinuation sometimes makes the behavior changes and symptoms more obvious to the clients."
- > "If a client denies that a cat is in chronic pain, I bet them a week's analgesia. If the cat feels fine, they won't see any change. No one has asked for credit on the analgesics yet."

# hacks

For practice,  
for pet owners,  
for better patient care.

## Hey, how'd you get that hack?

We asked *you*! No, really—in a survey, dvm360 Clinical Updates: Practice Hacks. Over a hundred veterinarians, practice managers and team members chimed in with ways to make life easier for you, your patients and your clients, which we've organized into categories on the next few pages. It's a hack jackpot (a hackpot?!). Anyway, you can find a ton of additional hacks and tips at [dvm360.com/hackslist](http://dvm360.com/hackslist). But we didn't stop there—we've also spliced in a number of Idea Exchanges from one of Vetted's parent pubs, *Veterinary Medicine*. Get more brilliant ideas at [dvm360.com/idea](http://dvm360.com/idea).

### Home hacks for clients

- > Memory foam, bean bag and egg crate foam beds
- > Heating pads (place in windowsill for cats)
- > Floor coverings, such as rugs, artificial grass, yoga mats and carpet scraps
- > Slings made out of blankets, towels or grocery sacks
- > Ramps or steps up to beds and windowsills (for cats)
- > Raised food and water dishes
- > Litter boxes with lower sides

*Editor's tip:* Find more products to hack at home at [dvm360.com/petproducts](http://dvm360.com/petproducts).

### Tools for the team

- > "We've posted Colorado State University's acute pain scales for cats and dogs in all our exam rooms and treatment areas. They help veterinary technicians keep track of how improved or degraded a patient has become over time. It also empowers clients to help with monitoring, as they use the scale when looking at their pet over time."
- > "We use a pain questionnaire during every exam as well as a scoring system that describes key postures and behaviors associated with each level of pain for hospital patients."
- > "All our veterinary technicians know that pain is not permitted. They've been instructed to alert the veterinarian if any pain is perceived, and they are rewarded for recognizing pain."

dvm360  
**leadership**  
CHALLENGE  
Vet Life Hacks

**Check it: Here's  
what *Vetted's* sister  
publications are up to:**

dvm360

dvm360 kicks off with hacking into the DVM brain—an exploration into the psychology of change in the context of veterinary medicine. We ask, is there a shortcut to personal change and transformation? Takeaways include setting realistic goals and preparing yourself mentally for changing your personal and professional life.

firstline.

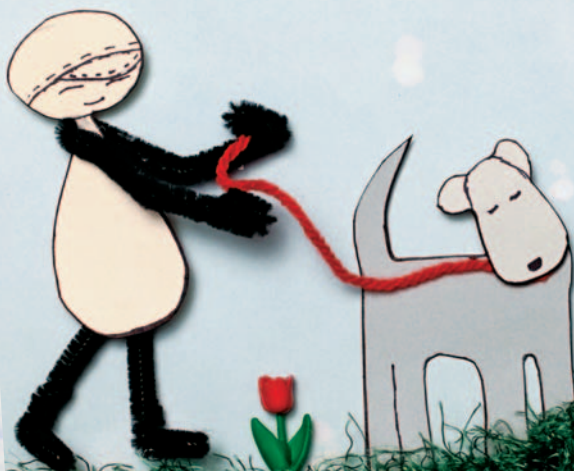
In *Firstline's* fast-paced, tip-focused package, we offer readers easy steps to change their practice lives, including simple steps to improve their relationships with pet owners, encourage compliance, make pet owners happier to pay, manage pain in pets and master technology ... and much more!

**To find all of this coverage,  
plus online-exclusive  
content, visit [dvm360.com/  
vetlifehacks](http://dvm360.com/vetlifehacks).**

Supported by an  
educational grant from:



**Boehringer  
Ingelheim**



## Make it easy to comply

- > "We offer a reduced fecal float fee for samples provided by the client."
- > "We send all fecal tests out of the clinic to our reference laboratory, so there's no stinky mess and no dirty microscope."
- > "We encourage clients to bring a stool sample from home. This saves us time and we tell the owner we won't have to stick that long thing up the pet's rear end."
- > "I recommend the injectable heartworm preventive to clients who have a hard time remembering monthly prevention by telling them that they only have to think about it twice a year instead of 12 times a year."

# Parasite compliance—there's a hack for that.

Put parasite woes to rest with these tips, as well as a few ideas to make those fecal exams stink less. Literally.

### Reduce fecal fumes with a compost bin

Our lab area can get pretty stinky when fecal samples sit out on the counter, waiting to be read or to be packaged for the off-site laboratory. So when we know there is going to be a delay between receiving the sample and being able to process it, we place the well-labeled sample into a compost bin with a built-in charcoal filter. The bin sits at a specific place on the counter when empty and is moved next to the microscope when it has a sample in it, so the technician knows to process it. Adding this step to our fecal sample processing routine has substantially cut down on bad smells in the lab area.

*Staff at Arbor Animal Hospital, La Grange Park, Illinois*

### Teddy has a tick! Tips for client ed

- > "We use prepaid fecal testing. If clients don't bring a sample with them, we send a cup home to bring back. If they forget this year, next year they will remember, since they'll remember the test they paid for and then didn't complete."
- > "We use a thorough hands-on physical to show clients the parasites and/or let them take a look in the microscope."
- > "We keep a heartworm-infected heart in a formalin jar to show to owners."
- > "We have parasite models of heartworm infection, tick and mite infections of the skin and parasite posters with endoscopic views of intestinal parasites."

### Pest-pounding websites

- > Handouts from [dvm360.com/parasitehandouts](http://dvm360.com/parasitehandouts)
- > Posters with larger-than-life photos of parasite infections, or heartworm infection
- > American Heartworm Society website: [heartwormsociety.org](http://heartwormsociety.org)
- > Companion Animal Parasite Council (CAPC) website: [capcvet.org](http://capcvet.org)
- > [Veterinarypartner.com](http://Veterinarypartner.com)

# Diabetes? You've got it licked!

Sweet! Here are some hacks for overcoming everyday challenges with this common endocrine disease.

## Home treatment: Take the sting out of injections

- > "We recommend that owners give the insulin injection while the pet is still eating so that it is distracted."
- > "We have a stuffed animal that the technicians use to demonstrate insulin administration with the clients. The client then has a chance to practice as many injections as they need on the stuffed animal before practicing on their own pet. It makes them more comfortable, and by the time the appointment is done, the client is no longer nervous and shaking at the sight and thought of injections."

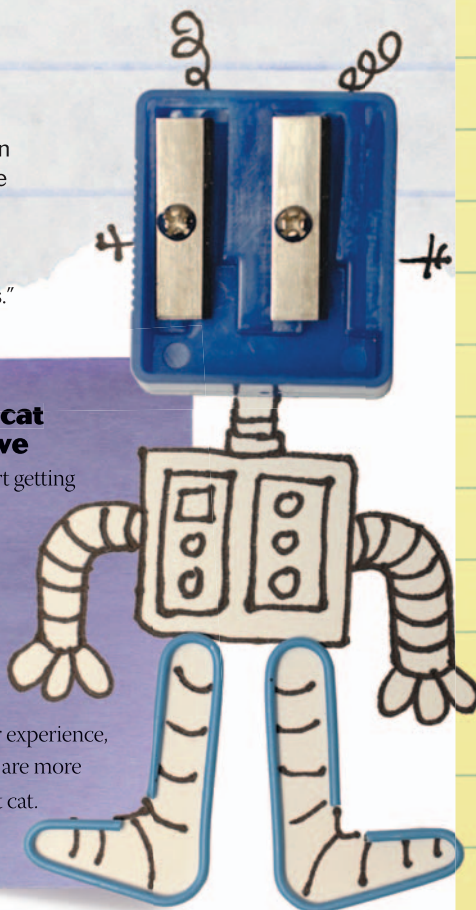
## Numb ear = happier cat = better glucose curve

Diabetic cats understandably start getting difficult after being subjected to repeated ear pricks for in-clinic glucose curves. We have found that numbing the ear we will be pricking by applying a topical anesthetic cream or spray improves the cat's comfort and attitude considerably. And, in our experience, the glucose curves of a happy cat are more reliable than are those of an upset cat.

*Dr. Anita Poling, Avon, Ohio*

## Client communication: Fun with analogies

- > "I like to explain that metabolism is like a waterwheel on an old-fashioned mill, and in a ketotic diabetic, the stream is running backward. To do something as drastic as change the flow of a stream, we may have to give insulin and dextrose at the same time."
- > "I explain that diabetes is like a highway system with all the exits blocked: Traffic (glucose) backs up and we need insulin to open up the exits and bring energy (glucose) back to the cells. Most clients seem to understand this simplified concept of diabetes mellitus."
- > "When explaining the disease process, we say, 'Insulin is the key to opening the cells' doors' to explain why the blood glucose is high but the dog is starving."



# Unclog your congestive heart failure protocols

You poured your hearts out when we reached out to you for ideas to help owners better care for their pets suffering from CHF.

## Educate clients

- > "As weird as it sounds, I compare hearts to elastic waistbands on underwear—eventually the elastic stretches and contracts so many times it wears out and the waist gets loose and thinner. People get that visual, and then it's easier to explain how drugs can help."
- > "I explain the heart is like a swimming pool pump, and then I explain how each drug will help the heart work more effectively in those terms."
- > "Since some pets are asymptomatic, we show clients radiographs of their pets compared with a normal heart."
- > "We show our clients the ECG strips. Visual aids really drive the point home."
- > "Since many small breeds develop CHF and also reverse sneeze, we have the client look at the mouth if they are uncertain if what they are seeing is a reverse sneeze or a CHF cough: Open mouth = gasping; closed mouth = OK."

## Get patients back in the door

- > "We have slightly lower fees for recheck appointments vs. a new problem."
- > "We assign a long-term nurse to each patient."

## Take-home tools

- > "To get owners to accurately and reliably obtain the resting respiratory rate, we provide a detailed handout with a log and also ask them to download the Cardalis heart disease monitor app."

# This won't hurt a bit: Best **vax** hacks

We're giving this our best shot (sorry, had to). Here's a collection of tips and hacks to help you jump vaccination hurdles with your clients.

## Sharpen client convos for a better patient experience

- > "Inform as I perform. Give them a 'massage pad' designed by a friend of mine as a gift. Massage pad can be used on their pets or themselves."
- > "I talk with the family while vaccinating. Cats don't even notice."
- > "Each new puppy or kitten gets a personal 'baby book' to bring back each visit. Clients smile every time."

## Calm patients before the stick

- > "We feed canned cheese to those that like it and do not have food restrictions, gently wave a toy to redirect their focus, rub acupressure points to calm and distract, have their owners talk to them (at a safe distance)."
- > "I gently pull/roll the skin at the location I will inject the needle—works like a charm, like dentists do to your gums."
- > "I fill 3-cc syringes with Nutical and feed it to kittens during vaccination."
- > "Treats, treats, treats. Allow the nervous pets to pretend they are leaving and inject at the door."
- > "After drawing up a vaccine for a cat or small dog I always change the needle to a new one. Surprising how dull the needle is after puncturing a couple vials."

## Charting adverse reactions to vaccines

We keep a chart that lists incidents of adverse reaction to vaccination. We note the date; the patient's name; which vaccine was given, including the manufacturer and serial number; and the reaction signs. We put a check mark next to the patient's name once we've notified the manufacturer of the reaction. While reactions are rare, they do happen, and this record will be helpful in the event of a vaccine recall.

*Pam D'Esopo, practice manager  
Dedham, Massachusetts*

## Favorite tips to prod clients into action

- > "Acknowledge the shortcomings of vaccines. Recognize that there is no one-size-fits-all vaccination protocol. This allows clients to see that I'm not just blindly following some predetermined vaccination routine but am selecting a protocol according to their pet's best interest."
- > "I remind clients that in my practice I still see two or three cases of distemper and parvovirus each year. Distemper is mostly incurable—better to vaccinate."
- > "I'll say, 'You are a good pet parent to protect your pet from disease.'"
- > "We have a video library online as well as playing in the exam room to explain vaccinations. Also I will do a graph showing decline of maternal antibodies while vaccination antibodies are increasing."



# MINIMALISM CAN BE MAGNIFICENT.

The ULTRA line of 0.5 mL vaccines\* offers:

- Pet owners effective protection with minimal injection volume for their pet
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# A study in **contrast** agents

Why they're a quick, easy way  
to examine the urinary tract.

*By Anthony Pease, DVM, MS, DACVR*



A ventrodorsal radiograph of a 9-month-old puppy dribbling urine. Note the slightly larger right ureter compared to the left (arrow) and the caudal insertion of the ureter into the urethra indicating an ectopic ureter and the cause for the clinical signs. (Courtesy of Dr. Anthony Pease.)



#### AUTHOR ILLUMINATION

*Dr. Anthony Pease, an associate professor at Michigan State's College of Veterinary Medicine, plays ice hockey as a goalie and recently played in an exhibition game with the Carolina Hurricanes' 2006 Stanley Cup Champion team.*

**Challenge:** You need a speedy way to examine a patient's urinary system that requires less skill and training than ultrasound.

**Solution:** Contrast agents!

**Why:** Because contrast agents are excreted by the kidneys, they provide a way for you to functionally see whether or not the kidneys are working. For example, if the kidneys are experiencing anuric renal failure, the contrast medium will not be excreted through the ureters and will accumulate in the kidneys. Contrast agents can help you diagnose conditions such as ruptured ureters, uteroliths and ectopic ureters, as well. Just give the patient intravenous (IV) contrast medium, take some radiographs at five and 10 minutes, and you'll be able to see the ureters and whether they go into the urinary bladder or go out into the urethra if the ureters are ectopic, and then you'll have your diagnosis (see radiograph above).

**Take note:** It's easy to become distracted by the different contrast agent options—iohexol (Omnipaque—GE Healthcare), iothalamate meglumine (Conray—Liebel-Flarsheim), diatrizoate meglumine (Hypaque—Amarsham Health). But as long as your patient is normotensive and you don't have any hydration issues (or the patient is receiving IV fluids), any of these contrast agents should work well and safely.

While using contrast medium will provide some nice functional information, it's a bit all-or-nothing. It either pinpoints the problem, or it doesn't. For example, it can't help you figure out glomerular filtration rates, or things of that nature, but it can help you determine if a dog that's been hit by a car has a ruptured urinary bladder, ureter or urethra.

# 'But I can't pay for all these diagnostics, Doc!'

**Situation:** The pet needs help, the client is short on money, and your veterinary team absolutely needs the diagnostics, such as contrast radiography, to decide on treatment. Third-party payment plans or in-house payment plan: What's the way to go?

## We do it all ...

"In addition to accepting CareCredit and now the H3 WellnessPlus card from Veterinary Credit Plans, we use PaymentBanc because they call clients when scheduled payments fail. We still have a few in-house payment plans—just promissory notes for clients who didn't qualify for anything else. We offer emergency care, so we have our share of these."

—Merja Reynolds, CVT, director of systems and operations, 1st Pet Veterinary Centers, Chandler, Arizona

## It's not magic—it's just another option

"In-house or third-party: One's not better than the other. They all have their role in helping veterinarians practice without focusing on the money as much. It's also all helpful for team members, who can tell clients we can lend something to you, rather than doing it behind the boss's back."

—Greg O'Brien, founder, O'Brien Veterinary Management, Illinois and Indiana

## Watch the fees ...

"Some credit providers charge veterinary hospitals a high fee. If a client chooses a zero interest loan for 24 months, for example, I've seen client credit providers charge as much as 14 percent to my hospital. I limit client options to a maximum 4.9 percent fee. That's more than most credit companies charge, but still manageable."

—Jeff Rothstein, DVM, MBA, owner, Progressive Pet Animal Hospitals, Michigan

## The fees are worth it ...

"Even if the cost to the practice [for third-party payment plans] is higher than with typical credit cards, the profit margin on additional services can be huge. This is, of course, assuming clients who take advantage of these payment options are filling holes in your appointment schedule and aren't using up spots from folks paying cash or using regular credit cards. You don't want to replace revenue that comes at a lower cost with revenue that comes at a higher cost. But if, overall, using these plans brings more revenue in the door, it can be very beneficial."

—Karen Felsted, CPA, MS, DVM, CVPM, PantheraT Consulting

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# JUM



# P into the future with urinary biomarkers

**SDMA markers can be detected earlier than other indicators of chronic kidney disease, leading to faster intervention and management.** *By Sarah J. Wooten, DVM*

**A**re you still using blood urea nitrogen (BUN) and creatinine concentrations to diagnose kidney disease in your veterinary patients? That is *sooo* last century. Diagnostic urinary biomarkers are the wave of the future, says Leigh Perry, VMD, DACVIM, of BluePearl Virginia Beach in Virginia Beach, Virginia. In a presentation at a recent CVC, Dr. Perry shared how urinary biomarkers are changing the game in veterinary practice.

## How do you define chronic kidney disease?

Chronic kidney disease (CKD) is defined in a few ways, Perry says. One is inappropriate urine specific gravity or elevated creatinine or symmetric dimethylarginine (SDMA) concentrations for more than 25 days. Another definition is inappropriate urine specific gravity (<1.030 in dogs, <1.035 in cats) in the face of azotemia or dehydration on at least one visit.

Once you diagnose CKD, Dr. Perry recommends looking at trends over time in the patient's laboratory work as the standard of care, which allows you to determine whether a patient's kidney damage is stable or if there is a progressive loss of nephrons. Trends also allow you to assess response to therapy. What is considered stable disease? Dr. Perry says creatinine

concentration ranges <1 mg/dl and SDMA ranges <10 µg/dl.

## What is SDMA?

SDMA is methylated arginine similar in size to creatinine. The kidneys are the main source of SDMA excretion, and it is not reabsorbed by the tubules. Dr. Perry says SDMA concentrations closely correlate with glomerular filtration rate (GFR): They increase in the blood when GFR is reduced by 40%. This allows earlier detection of CKD than creatinine, which is not increased until there is a 75% decrease in

GFR and is affected by nonrenal factors. In particular, SDMA has a 91% specificity and 100% sensitivity for CKD, making SDMA a highly sensitive and specific test for chronic kidney disease in both dogs and cats.<sup>1</sup>

Practically speaking, IDEXX Laboratories has recently developed a direct immunoassay that measures SDMA in serum or plasma. SDMA is incredibly stable in canine and feline serum and plasma for seven days at room temperature and 14 days at 39 F with up to three freeze-thaw cycles, says Dr. Perry.

## Another chronic problem? Compliance with those rechecks

When communicating with the client, remember to stress the importance of follow-up examinations and blood work to assess therapy efficacy and disease progression. Advise your client that your treatment plan will depend on whether there is ongoing damage to the kidney, and follow-up laboratory work and examinations will help you design the treatment plan that will maximize their pet's quality and quantity of life.

I usually set up recheck appointments before the client leaves the hospital, tell them verbally and give them written instructions of exactly what we will do at the next visit. I also schedule email reminders for subsequent laboratory work and examination follow-up while I write the records to keep patient follow-up from falling between the cracks.

—Dr. Sarah Wooten

# 'Sup with *your* supplement game?

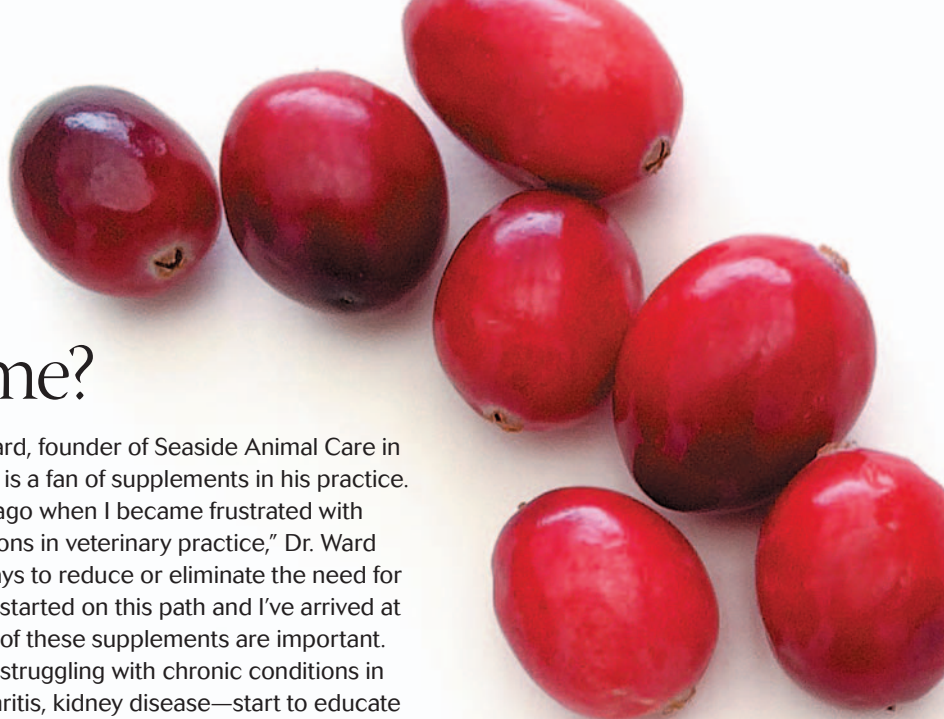


Dr. Ernie Ward

It's no secret: Dr. Ernie Ward, founder of Seaside Animal Care in Calabash, North Carolina, is a fan of supplements in his practice. "It began about 15 years ago when I became frustrated with managing chronic conditions in veterinary practice," Dr. Ward says. "I was looking for ways to reduce or eliminate the need for chronic medications. So I started on this path and I've arrived at the conclusion that many of these supplements are important.

"If you're a veterinarian struggling with chronic conditions in your patients—things like cancer, osteoarthritis, kidney disease—start to educate yourself," he says. Today's veterinarians need to understand the science and applications of these products "and actually use them."

Dr. Ward is particularly fond of whole-food supplements such as mushroom and cranberry extracts. "Synthetic compounds are good in some instances, but I would challenge the industry to give us more whole food supplements, and make them affordable so I can dispense them in my practice."



## **Creatinine works for me. Why should I care about SDMA?**

SDMA concentrations appear to be unaffected by age, sex, muscle mass, liver disease, heart disease or hormonal conditions such as Cushing's syndrome, Dr. Perry says. It also is less variable than creatinine, she notes. Creatinine concentrations vary with breed, age, muscle mass, dietary protein intake, tubular secretion of creatinine, sex, certain medications, interfering substances and dog size. For example, Dr. Perry says, in dogs weighing 26 to 45 kg, normal creatinine concentrations can be as high as 2 mg/dl because of higher muscle mass and lower GFRs in comparison to small and medium-sized dogs.

## **If creatinine is already elevated, is there any point in running SDMA?**

Yes, Dr. Perry says—especially when it comes to International Renal Interest Society (IRIS) staging and treatment

planning. If SDMA concentrations are >25 µg/dl but there is no further elevation in creatinine concentration, then the patient should be treated as the next IRIS stage up. For example, if the patient is stage 2 based on creatinine concentration but SDMA is >25 µg/dl, Dr. Perry thinks that patient should be treated as an IRIS stage 3 patient.

## **What about when creatinine and SDMA don't agree?**

If a patient has a normal creatinine concentration but an elevated SDMA concentration, that patient is considered IRIS stage 1 and should be treated as such, Dr. Perry says. SDMA allows detection of CKD in 7% of canine patients and 16% of feline patients that would otherwise be missed with standard blood chemistry workups.

If creatinine concentration is elevated but SDMA concentration is normal, then you should consider other confounding factors, such as muscle mass, interfer-

ing substances, heart disease and dietary protein, Dr. Perry says.

## **More markers coming soon?**

According to Dr. Perry, additional urinary biomarkers, including urine neutrophil gelatinase-associated lipocalin (uNGAL), urinary clusterin, serum inosine and cystatins are being explored in the laboratory setting as early indicators of acute tubular damage, acute kidney damage, acute damage due to nephrotoxic medications or pyelonephritis, return to normal function after acute damage and more. The idea is that these novel kidney biomarkers identify active damage even earlier, allowing intervention to occur before chronic, irreversible change takes place.

### **Reference**

1. Hokamp JA, Nabity MB. Renal biomarkers in domestic species. *Vet Clin Pathol* 2016;45:28-56.

## **FOR YOUR REFERENCE**

To learn more about SDMA testing and other reference lab offerings, visit [dvm360.com/referencetests](http://dvm360.com/referencetests)

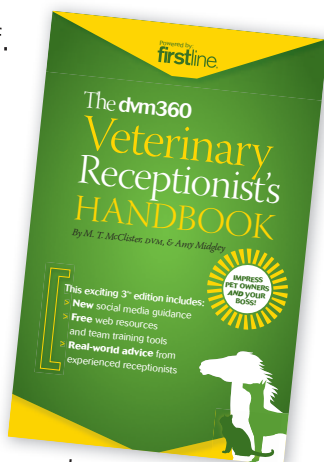
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<sup>1</sup> Ranganathan N, et al. 2nd World Congress of Nephrology, June 2005

# Secrets *of the* pyramid

One of the seven wonders of the veterinary world, the great acute pain management pyramid can give structure to your clinic's pain strategy for dogs and cats. *By Kathryn Primm, DVM*

*Kathryn Primm, DVM, owns and practices at Applebrook Animal Hospital in Ooltewah, Tennessee, and is the author of Tennessee Tails: Pets and Their People. A self-described technogeek and computer gamer, Dr. Primm loves to rock out to Octane on SiriusXM. Her current fave: "Black Honey" by the band Thrice.*

**N**ot long ago, it was common for patients (especially cats) to be anesthetized using only gas. At the time, veterinarians were unaware that anesthetic gas does not provide analgesia. “We tortured our patients,” says Robin

Downing, DVM, MS, DAAPM, DACVSMR, CVPP, CCRP. But thankfully, as the old Virginia Slims cigarettes ads asserted back in the day, veterinary medicine has come a long way, baby, when it comes to acute pain management. Equipped with better knowledge and the right combination of tools, we can avoid causing our feline and canine patients unnecessary pain and distress.

## Pain particulars

Pain is complex, says Dr. Downing. Acute pain can stem from a planned event, like surgery, or an unplanned event, like trauma, and can vary in severity. Often, it isn't the only pain present. A patient could already be experiencing a chronic pain issue when acute pain begins.

We now know that pain becomes maladaptive as time goes on and can cause the patient to suffer, a process known as pain wind-up. To stop the wind-up before it begins, we can mount a preemptive strike against pain by being early, aggressive and in tune with our patients and by having the right medicine at our disposal, says Dr. Downing. She's constructed a tri-level acute pain management pyramid to give some structure to what patients need.

## Acute pain management pyramid

When it comes to managing acute pain, it is important to use every level of the pyramid in order to target specific tissues and receptors in the body. Prevention is the key!

## Local anesthetic infusions

**Examples: Lidocaine, bupivacaine**

Since we now know that gas anesthesia affects consciousness only, we need to have a pain intervention strategy already in play when the patient wakes up. Local anesthetic infusions can help prevent wind-up at the surgical site. Local analgesics such as lidocaine and bupivacaine block pain signals at the site of the stimulus and thus alter pain perception. These medications are affordable and easy to use, but they are not as effective long term and should be coupled with postoperative systemic pain coverage.

## Nonsteroidal anti-inflammatory drugs

**Examples: Carprofen, meloxicam, firocoxib, robenacoxib (cats only)**

NSAIDs play a primary role in analgesia and should be a part of analgesic protocols. They reduce inflammation and can have primary analgesic effects. They affect multiple locations in the nervous system. NSAIDs can address pain in multiple ways and are a cornerstone to any anesthetic protocol.

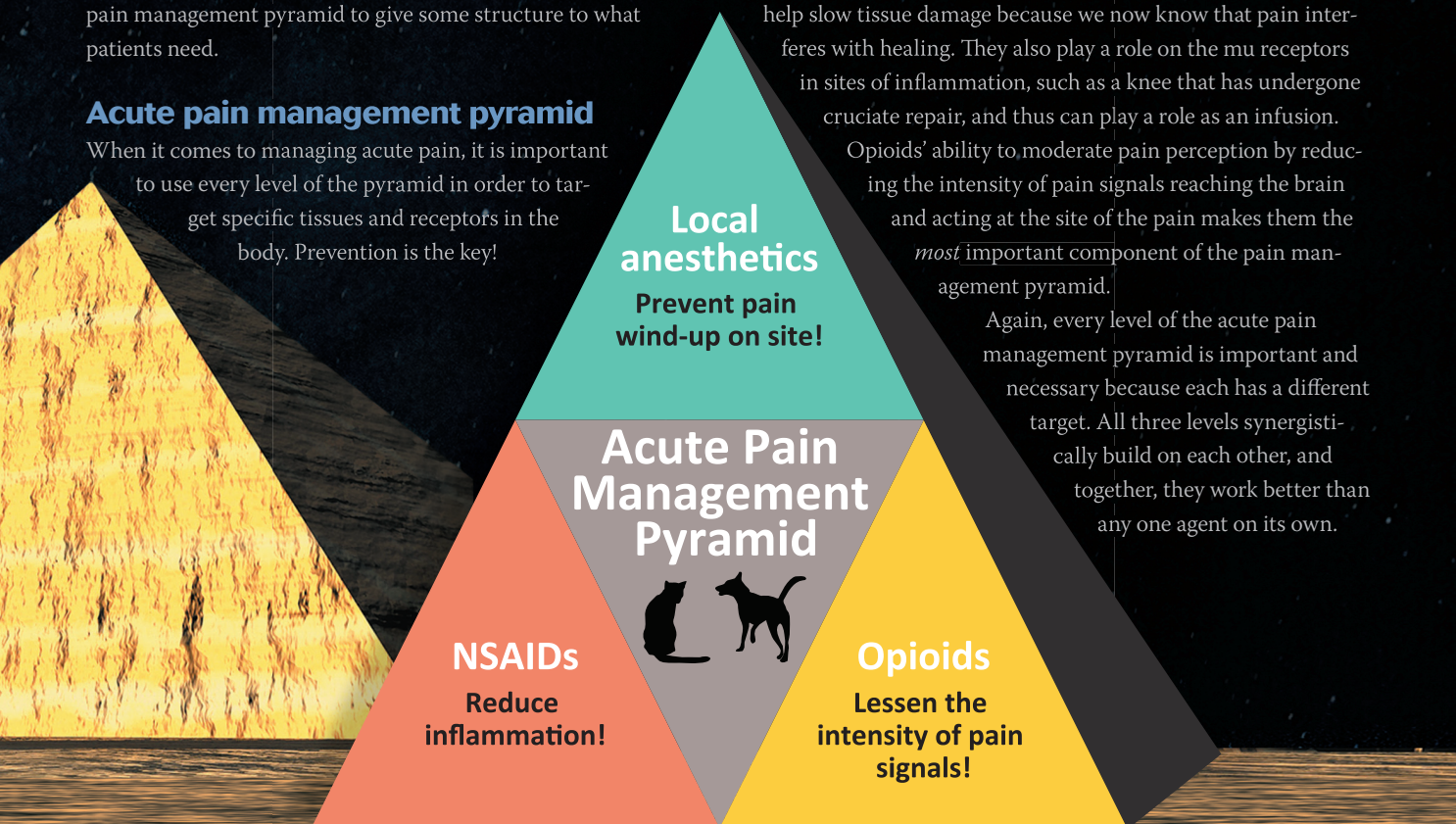
## Opioids

**Examples: Morphine, hydromorphone, fentanyl, buprenorphine**

Opioids are also effective at interrupting pain wind-up and can help slow tissue damage because we now know that pain interferes with healing. They also play a role on the mu receptors in sites of inflammation, such as a knee that has undergone cruciate repair, and thus can play a role as an infusion.

Opioids' ability to moderate pain perception by reducing the intensity of pain signals reaching the brain and acting at the site of the pain makes them the most important component of the pain management pyramid.

Again, every level of the acute pain management pyramid is important and necessary because each has a different target. All three levels synergistically build on each other, and together, they work better than any one agent on its own.



## REMEMBER THE

# 3 Rs

Because pain can be adaptive or maladaptive, Dr. Robin Downing says veterinarians need to be mindful of the three Rs of pain management:

### Recheck:

Look at your patient again (and again).

### Reassess:

Take into account anything that may have changed since your last check.

### Revise:

Alter the pain management cocktail to meet the patient's current needs, and titrate the medications down as the patient heals.

Now that we know more about pain, appropriate pain management isn't just good medicine—it's a minimum standard of care. It is not just our job, but our obligation, to create comprehensive pain strategies for every patient every time and to stay up-to-date as their pain needs change.



## Points on pain control pushback

**Q** We're getting some clients who don't want to pay for and don't see the need for some at-home pain control drugs. Can you offer us any tips for explaining the value and importance of pain control for pets?

Many pet owners don't understand how pervasive pain is (acutely and chronically), pets' ability to hide pain, the effect untreated pain can have on the nervous system or the fact that pain is a leading reason for euthanasia in older pets, says Robin Downing, DVM, MS, DAAPM, DACVSMR, CVPP, CCRP, owner of Windsor Veterinary Clinic and The Downing Center for Animal Pain Management in Windsor, Colorado.

So, first things first: "We must educate, educate, educate. And that means speaking to our clients in language they understand and using verbiage that gets their attention," says Dr. Downing.

There are a few approaches you can use to effectively communicate the necessity of pain control to skeptical clients, depending on the type of pain the pet is experiencing.

**ACUTE PAIN.** Use analogies. Explain that because pets' nervous systems are similar to ours, anything that is painful for us will be painful for them—even a minor surgery. In many cases, they need pain medicine to prevent unnecessary suffering, much like humans do after an injury or procedure.

There's also scientific evidence that failure to manage pain as soon

as possible can have a negative impact on the nervous system, potentially causing persistent pain long after the injury or surgery occurs.

"The more involved the surgery, such as an orthopedic procedure, the more likely this is to happen," says Dr. Downing. "I have dealt with dogs that cannot use their leg years after ACL surgery because they didn't have appropriate pain management early, and now the leg hurts all the time and they can't use it normally."

**CHRONIC PAIN.** Perform a careful palpation exam to show clients their pets' reaction when pressure is applied to certain areas.

"At my practice, I always demonstrate the pressure I will use on the patient by pressing on the client's forearm, with their permission," Dr. Downing says. "That way, they know that the pressure I'm using should be perceived as pressure, not as pain. If the pet reacts—they consistently do—the client can see the pet is truly hurting."

She also recommends using phrases like, "Your pet is suffering," or "Your pet deserves to be comfortable and relieved of pain." Choosing words with emotion makes it more likely that pain control will resonate with clients.

### RAISE A PAW FOR MORE ON PAIN MANAGEMENT IN CATS AT CVC SAN DIEGO

Dec. 8-11. Dr. Downing will talk on finding feline pain where it lives: perfecting your pain palpation plan and other pain topics. Visit [thecvc.com/sd](http://thecvc.com/sd) to learn more. Then check out [dvm360/painproducts](http://dvm360/painproducts) for products to help relieve pain in pets.



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## Approach to CKD (Grauer Editorial for Vetoquinol)



The International Renal Interest Society (IRIS) was created to advance the scientific understanding of kidney disease in small animals and specifically to help practitioners better diagnose, understand, and treat canine and feline renal disease ([www.IRIS-Kidney.com](http://www.IRIS-Kidney.com)). The following system was developed by IRIS as guide to staging stable canine and feline CKD primarily to link appropriate diagnostic and therapeutic efforts to patients with varying degrees of CKD.

Serum Creatinine Concentration	Stage 1 (Non-azotemic CKD)	Stage 2 (Non-azotemic to Mild renal azotemia)	Stage 3 (Moderate renal azotemia)	Stage 4 (Severe renal azotemia)
Cats (mg/dl)	<1.6	1.6-2.8	2.9-5.0	>5.0
Dogs (mg/dl)	<1.4	1.4-2.0	2.1-5.0	>5.0

This staging system is not used to make a diagnosis of CKD but once CKD has been determined to be present, the kidney disease can be categorized into one of four stages. The staging system is based primarily serum creatinine concentrations (sCr) and applies only to patients that are well hydrated and have stable CKD – stability is documented by < 20% variation in sCr over at least a two week period. sCr must always be interpreted in light of the patient's muscle mass, urine specific gravity, and physical examination findings in order to rule out pre- and post-renal causes of azotemia. The IRIS CKD staging system cannot be applied to patients with pre or post renal azotemia or patients with acute or decompensated (sometimes termed “acute on chronic”) kidney disease. The above stages are further classified by the presence or absence of proteinuria and systemic hypertension as follows:

Urine Protein/Creatinine Ratio (UPC)	Classification
< 0.2	Non-Proteinuric
0.2-0.4 (Cats); 0.2-0.5 (Dogs)	Borderline Proteinuric
> 0.4 (Cats); > 0.5 (Dogs)	Proteinuric

Renal proteinuria is persistent (at least two positive tests separated by 10-14 days) and associated with inactive urine sediments. Renal proteinuria can be glomerular or tubular in origin (i.e., excessive filtration or decreased tubular reabsorption or both). UP/Cs > 2.0 suggest glomerular range proteinuria which is rare in cats compared with dogs. It's important to recognize that the UP/C does not differentiate renal proteinuria from proteinuria associated with lower urinary tract inflammation; the clinician needs to make this determination by assessing the urine sediment.

Systolic Blood Pressure (mm Hg)	Risk of Target Organ Damage	Arterial Pressure (AP) Category
<150	Minimal	AP0
150-159	Low	AP1
160-179	Moderate	AP2
>180	High	AP3

Systolic blood pressure is often measured by the Doppler methodology in dogs and cats. IRIS blood pressure sub-staging is based on risk of target organ (eyes, brains, hearts, and kidneys) damage. Most clinicians consider systolic hypertension to be > 160 mm Hg and will initiate treatment at that point.

### Clinical Signs and Diagnosis:

Stage 1 CKD could be diagnosed in dogs and cats with abnormal renal palpation or renal ultrasound findings, persistent renal proteinuria, urine concentrating deficits due to renal disease, and increases in sCr over time, even if the values remain in the normal range. For example, a sCr that increases from 0.6 to 1.2 mg/dl over several years could indicate at least a 50% reduction in GFR (at least 50% loss of nephrons because compensatory hypertrophy of remaining nephrons increases the functional capacity of those nephrons). Serum symmetrical dimethyl arginine (SDMA) is new renal function marker that may aid in the early diagnosis of CKD in both dogs and cats. In recent longitudinal studies of dogs and cats that developed CKD, SDMA concentrations increased above normal approximately 9 and 17 months, respectively, prior to increases in sCr

above reference range. Based on these studies it appears that SDMA is a more sensitive renal function biomarker than is sCr. A persistent elevation in SDMA (>14 mg/dl) in a dog or cat with sCr <1.4 or <1.6 mg/dl, respectively indicates reduced renal function and Stage 1 CKD.

In general, the diagnostic approach to patient once CKD has been identified and staged is focused on three areas: 1) characterization of the primary renal disease and/or complicating disease processes, 2) characterization of the stability of the renal disease and function, and 3) assessment patient's problems associated with the decreased renal function. Further definition of the renal disease (beyond a standard minimum data base) should include for example, quantitation of proteinuria, measurement of blood pressure, urine culture, and kidney imaging. The stability of the renal function would be assessed by serial monitoring of abnormalities identified during the initial characterization of the renal disease. This monitoring should always include serum biochemistry profiles, urinalyses, quantitation of proteinuria, and measurement of blood pressure but may also include follow-up urine cultures and ultrasound examinations. Characterization of the renal disease and its stability is most important in the earlier stages of CKD when appropriate treatment has the greatest potential to improve or stabilize renal function. Characterization of patient problems becomes more important in the later stages of CKD when clinical signs tend to be more severe. In the later stages of CKD, diagnostic (and subsequent therapeutic) efforts should directed at patient problems that may include anorexia, vomiting, dehydration, acidosis, potassium depletion, anemia, and uremia.

### Management:

Similar to the diagnostic approach to CKD, the therapeutic approach should also be tailored to fit the patient's stage of disease. For example, disease specific treatments for bacterial pyelonephritis and renal lymphosarcoma as well as treatments designed to slow the progression of renal disease (so called renoprotective treatments) will be of most value in the earlier stages of CKD. Examples of renoprotective treatments include dietary change designed to reduce serum phosphorus concentrations and decrease soft tissue mineralization. Angiotensin-converting enzyme inhibitors, angiotensin receptor blockers, and calcium channel blockers are used to normalize systemic and intraglomerular blood pressures and reduce proteinuria. Proteinuria is an important risk factor for the development of azotemia in cats and the progression of azotemia and decreased survival in dogs and cats. In the later stages of CKD, treatment tends to be focused on decreasing the patient's clinical signs associated with the decreased renal function.

### Diagnostic and Treatment Priorities Based on IRIS Stage

#### Stages 1 and 2:

Monitor for progression of disease  
Rule out and treat any correctable primary or complicating disease e.g.,

- > Ureteral obstruction
- > Ascending urinary tract infections
- > Renal lymphosarcoma
- > Hypercalcemia
- > Hypertension
- > Proteinuria

#### Stages 2 and 3:

Same as above plus:  
Renoprotective treatments e.g.,

- > Dietary modification
- > Enteric phosphate binders

#### Stages 3 and 4:

Same as above plus:  
Address patient problems as they arise e.g.,

- > Anorexia (appetite stimulants like mirtazapine)
- > Nausea/vomiting (antiemetics like maropitant and proton pump blockers like omeprazole)
- > Hypokalemia (potassium supplementation)
- > Acidosis (alkali supplementation)
- > Anemia (recombinant erythropoietin)
- > Uremia (enteric dialysis)

# HOSPITAL DESIGN

## Illuminating interiors

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Interior design is an easily overlooked part of a hospital design project. Hey, you're all about the medicine—why does paint color matter? But just as much as clients remember the smile on a receptionist's face, the tender care of a technician or the urgent, down-to-earth recommendations from a thoughtful veterinarian, they'll remember the color of your reception area and the lighting and what mood it conveyed.

While it's not a part of a medical protocol, interior design is important to do well. (If you're not interested enough or up to the task, hire an expert.) Dave Gasser, AIA, NCARB, and Becky Valentine of BDA Architecture in Albuquerque, New Mexico, offer three tips on the next page to make your interiors shine.



Dreaming Summit Animal Hospital is located in a residential area and its design follows a traditional theme.



**What high definition did for video, we've done for surgical lighting.**

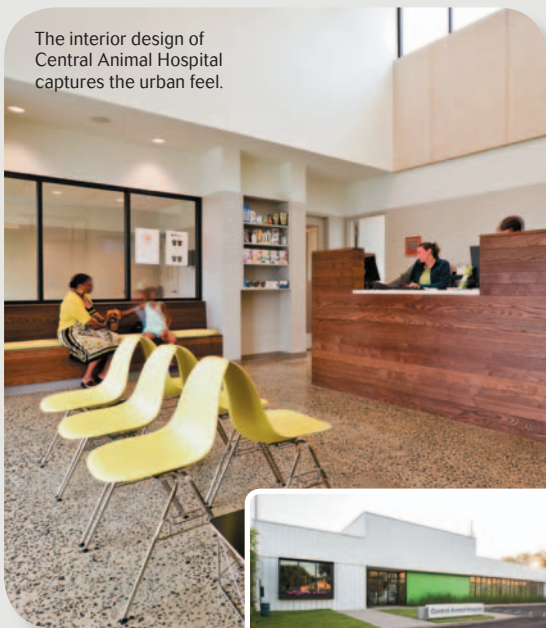
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# HOSPITAL DESIGN

The interior design of Central Animal Hospital captures the urban feel.



## 1 Decide who you want to be

From modern and contemporary to homey or traditional, the styling of your interior conveys a particular message and feeling to your clients. Consider your practice's philosophy and what your mission is—then match your style to that feeling. For example, an ultra-modern space resonates well in many urban settings, although it might not work as well in more laid-back, lawn-filled suburbia.

## 2 Match your outside to your inside

You put your blood, sweat, tears—and money—into a gorgeous exterior. Don't stop there. The interior is just as important. If you need inside inspiration, consider your exterior first. Are you on the water and do you use a nautical feel out front? Are you in the muted desert and can you draw inspiration from all the earth tones that go into your exterior? Keep it consistent—bring the outside in.



## 3 Make sure your design follows you everywhere

An important part of keeping great employees is providing comfort and satisfaction on the job—happier staff stay longer. Some practitioners throw all (or almost all) their money into the exterior, reception area and waiting room, with the idea that that's where they earn money and wow impressionable clients. But it can pay off to take your beautiful design into the clinical and staff spaces. Bring in those pops of color and natural light you spread out front. Just because you're "in the back" doesn't mean interior design elements have to end.



Finan Animal Hospital has a skylight to bring in natural light in its treatment area, as well as a bright accent wall in one of the practice's brand colors.





revolution<sup>®</sup>  
(selamectin)

#1 in flea and heartworm protection\*

# 5 in 1

## parasite protection



**Fleas**



**Heartworms**



**Roundworms**



**Hookworms**



**Ear Mites**

### Adds up to unlimited purrs.

REVOLUTION<sup>®</sup> (selamectin) effectively kills fleas and prevents flea eggs from hatching, while providing broad-spectrum parasite control. Unlike some parasiticides, it's safe for breeding and nursing cats and doesn't require separation from family or other pets after application.



[revolution4catsdvm.com](http://revolution4catsdvm.com)

#### IMPORTANT SAFETY INFORMATION:

Do not use REVOLUTION on sick, weak, or underweight cats. Use only on cats 8 weeks and older. Side effects may include digestive upset and temporary hair loss at application site with possible inflammation. In people, REVOLUTION may be irritating to skin and eyes. Wash hands after use. See Brief Summary of full Prescribing Information on page 36.

\*VetInsight<sup>™</sup> Analytics January 2016. Zoetis data on file.

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zoetis<sup>™</sup>

# revolution® (selamectin)

## Topical Parasiticide For Dogs and Cats

### BRIEF SUMMARY:

See package insert for full Prescribing Information.

### CAUTION:

US Federal law restricts this drug to use by or on the order of a licensed veterinarian.

### INDICATIONS:

Revolution is recommended for use in dogs six weeks of age or older and cats eight weeks of age or older for the following parasites and indications:

#### Dogs:

Revolution kills adult fleas and prevents flea eggs from hatching for one month and is indicated for the prevention and control of flea infestations (*Ctenocephalides felis*), prevention of heartworm disease caused by *Dirofilaria immitis*, and the treatment and control of ear mite (*Otodectes cynotis*) infestations. Revolution also is indicated for the treatment and control of sarcoptic mange (*Sarcoptes scabiei*) and for the control of tick infestations due to *Dermacentor variabilis*.

#### Cats:

Revolution kills adult fleas and prevents flea eggs from hatching for one month and is indicated for the prevention and control of flea infestations (*Ctenocephalides felis*), prevention of heartworm disease caused by *Dirofilaria immitis*, and the treatment and control of ear mite (*Otodectes cynotis*) infestations. Revolution is also indicated for the treatment and control of roundworm (*Toxocara cati*) and intestinal hookworm (*Ancylostoma tubaeforme*) infections in cats.

### WARNINGS:

**Not for human use. Keep out of the reach of children.**

**In humans, Revolution may be irritating to skin and eyes.** Reactions such as hives, itching and skin redness have been reported in humans in rare instances. Individuals with known hypersensitivity to Revolution should use the product with caution or consult a health care professional. Revolution contains isopropyl alcohol and the preservative butylated hydroxytoluene (BHT). Wash hands after use and wash off any product in contact with the skin immediately with soap and water. If contact with eyes occurs, then flush eyes copiously with water. In case of ingestion by a human, contact a physician immediately. The material safety data sheet (MSDS) provides more detailed occupational safety information. For a copy of the MSDS or to report adverse reactions attributable to exposure to this product, call 1-888-963-8471.

Flammable - Keep away from heat, sparks, open flames or other sources of ignition.

**Do not use in sick, debilitated or underweight animals (see SAFETY).**

### PRECAUTIONS:

Prior to administration of Revolution, dogs should be tested for existing heartworm infections. At the discretion of the veterinarian, infected dogs should be treated to remove adult heartworms. Revolution is not effective against adult *D. immitis* and, while the number of circulating microfilariae may decrease following treatment, Revolution is not effective for microfilariae clearance.

Hypersensitivity reactions have not been observed in dogs with patent heartworm infections administered three times the recommended dose of Revolution. Higher doses were not tested.

### ADVERSE REACTIONS:

#### Pre-approval clinical trials:

Following treatment with Revolution, transient localized alopecia with or without inflammation at or near the site of application was observed in approximately 1% of 691 treated cats. Other signs observed rarely (<0.5% of 1743 treated cats and dogs) included vomiting, loose stool or diarrhea with or without blood, anorexia, lethargy, salivation, tachypnea, and muscle tremors.

#### Post-approval experience:

In addition to the aforementioned clinical signs that were reported in pre-approval clinical trials, there have been reports of pruritus, urticaria, erythema, ataxia, fever, and rare reports of death. There have also been rare reports of seizures in dogs (see **WARNINGS**).

### SAFETY:

Revolution has been tested safe in over 100 different pure and mixed breeds of healthy dogs and over 15 different pure and mixed breeds of healthy cats, including pregnant and lactating females, breeding males and females, puppies six weeks of age or older, kittens eight weeks of age or older, and avermectin-sensitive collies. A kitten, estimated to be 5-6 weeks old (0.3 kg), died 8 1/2 hours after receiving a single treatment of Revolution at the recommended dosage. The kitten displayed clinical signs which included muscle spasms, salivation and neurological signs. The kitten was a stray with an unknown history and was malnourished and underweight (see **WARNINGS**).

**DOGS:** In safety studies, Revolution was administered at 1, 3, 5, and 10 times the recommended dose to six-week-old puppies, and no adverse reactions were observed. The safety of Revolution administered orally also was tested in case of accidental oral ingestion. Oral administration of Revolution at the recommended topical dose in 5- to 8-month-old beagles did not cause any adverse reactions. In a pre-clinical study selamectin was dosed orally to ivermectin-sensitive collies. Oral administration of 2.5, 10, and 15 mg/kg in this dose escalating study did not cause any adverse reactions; however, eight hours after receiving 5 mg/kg orally, one avermectin-sensitive collie became ataxic for several hours, but did not show any other adverse reactions after receiving subsequent doses of 10 and 15 mg/kg orally. In a topical safety study conducted with avermectin-sensitive collies at 1, 3 and 5 times the recommended dose of Revolution, salivation was observed in all treatment groups, including the vehicle control. Revolution also was administered at 3 times the recommended dose to heartworm infected dogs, and no adverse effects were observed.

**CATS:** In safety studies, Revolution was applied at 1, 3, 5, and 10 times the recommended dose to six-week-old kittens. No adverse reactions were observed. The safety of Revolution administered orally also was tested in case of accidental oral ingestion. Oral administration of the recommended topical dose of Revolution to cats caused salivation and intermittent vomiting. Revolution also was applied at 4 times the recommended dose to patent heartworm infected cats, and no adverse reactions were observed.

In well-controlled clinical studies, Revolution was used safely in animals receiving other frequently used veterinary products such as vaccines, anthelmintics, antiparasitics, antibiotics, steroids, collars, shampoos and dips.

### STORAGE CONDITIONS:

Store below 30°C (86°F).

**HOW SUPPLIED:** Available in eight separate dose strengths for dogs and cats of different weights (see **DOSEAGE**). Revolution for puppies and kittens is available in cartons containing 3 single dose tubes. Revolution for cats and dogs is available in cartons containing 3 or 6 single dose tubes.

NADA 141-152, Approved by FDA

zoetis

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Kalamazoo, MI 49007

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# HELPFUL

## 'We're all mad here'

If you're mad about cats going mad at your clinic, here's some good news: A recent study examined the safety and efficacy of trazodone, a serotonin antagonist and reuptake inhibitor, to sedate cats.<sup>1</sup> The gist: Six male cats were given oral trazodone at 50, 75 and 100 mg, along with a placebo, and then observed for changes in activity and other stress cues (such as aggression and vocalization). Data showed that the cats were less active after receiving trazodone, with peak sedation occurring 2.5 hours after receiving 100 mg. Behavior and stress tests showed no significant difference between trazodone and placebo—but the authors say the study design may be to blame. Regardless, trazodone was well-tolerated by the cats and no adverse effects were observed. In a world of limited feline oral anxiolytic options, trazodone may show promise in calming cats headed to the clinic.

—Kathryn Primm, DVM



Read more about this study at  
[dvm360.com/madcats](http://dvm360.com/madcats)

<sup>1</sup>Orlando JM, Case BC, Thomson, AE et al. Use of oral trazodone for sedation in cats: a pilot study. *J Feline Med Surg* 2016;18:476-482.

## Owner wannabe? Check this checklist

You know what they say: Every dream to buy a veterinary practice starts with a checklist. Well, maybe they don't say that. But they should—and we just happen to have one! This checklist comes from Benchmarks 2015: A Study of Well-Managed Practices, source of all the best data, advice and tools relating to veterinary practice ownership you can find in the market. Download the PDF at [dvm360.com/buyingchecklist](http://dvm360.com/buyingchecklist).



# STUFF

## Tips for Tabby's temperamental tummy

Whether a cat presents to your clinic with anorexia or develops it during hospitalization, you can take steps to manage each case while the cat is in your care.

First, you have to know the triggers, says feline practice owner Susan Little, DVM, DABVP, and then your veterinary team must make a concerted effort to minimize the triggers every day. Here are her top tips for minimizing stress and maximizing comfort.

- 1. Don't forget to feed.** Since many veterinarians fail to write specific orders for feeding cats, the team may withhold food unintentionally. There are few medical reasons not to feed a cat.
- 2. Offer a hidey-hole.** Cats need privacy, so a hiding place in the cage is important. Place the litter box at the front of the cage and food and a box in the back.
- 3. Nix noisy nuisances.** The dingy front doorbell, beeping machines and barking dogs can be interpreted as threats by cats, causing them to believe their lives are in danger.
- 4. Limit your lighting.** Cats see best in low light, so make sure lights are turned off or dimmed whenever possible, as long as it does not impair monitoring.
- 5. Provide some pleasure.** Give cats attention beyond feeding and medication, such as petting, brushing or talking to them. Some daily interactions should be pleasurable, not medical.
- 6. Forget foreign food.** Don't change a cat's food while it's hospitalized. This can cause food aversion associated with stress, pain or nausea. Instead, wait until the cat is home and feeling better to start a gradual change to a new diet.
- 7. Be consistent.** Cats love predictability. A disruption in the routine can be stressful, so keep tasks and activities on a schedule.
- 8. Corral cage cleanings.** Unless there's a medical reason to do a full cage cleaning every day, spot-clean cages as needed. Full cleanings require cats to start over marking their territories and making cages familiar.
- 9. Never neglect nausea.** Learn to recognize the signs of nausea in cats, such as lip-smacking, turning away from food and refusing food, as well as vomiting.

If an anorectic cat presents with nausea, address the nausea first. Once it's controlled through medication, offer cold or room-temperature food intermittently. This avoids food aversion by reducing the odor.

Need more detail? Little recommends these free guidelines from [catvets.org](http://catvets.org): Feline-Friendly Nursing Care Guidelines and Feline-Friendly Handling Guidelines.

—Meghan E. Burns, DVM



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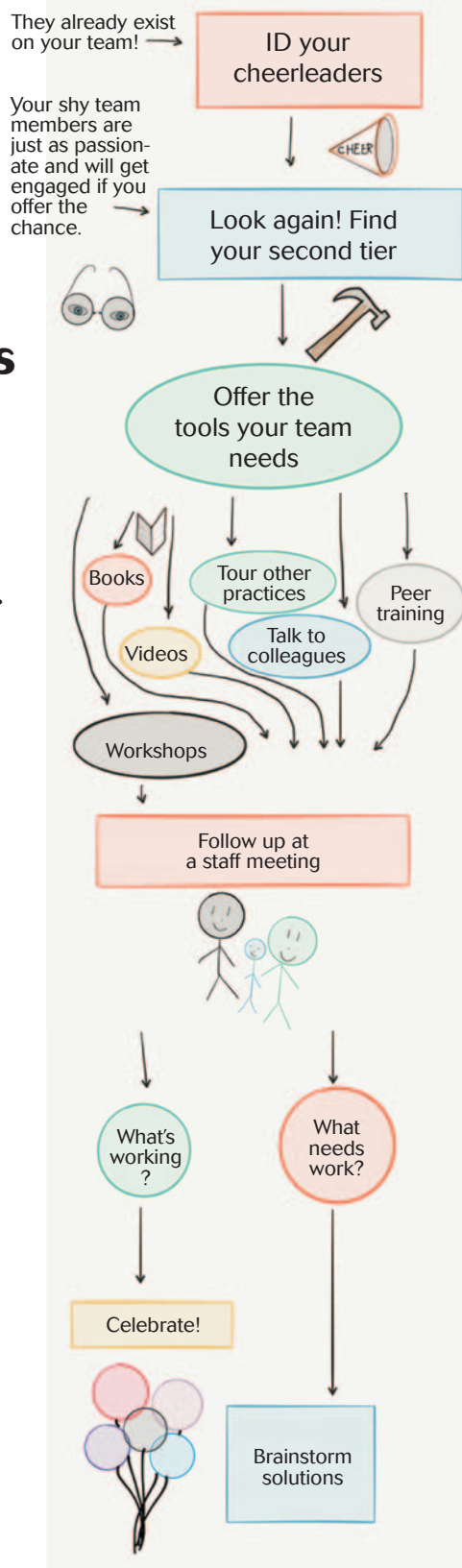
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# Look sharp! An algorithm to change your team's habits

**Think your team can't commit to low-stress veterinary visits? Try this approach. (It works—really!)**

Practice manager Kelly Searles of Bigger Road Veterinary Center in Springboro, Ohio, described the steps she took as a manager to implement low-stress veterinary visits in her practice. We've turned it into a handy dandy algorithm you can use to make the change to low-stress veterinary visits—or to implement practically any other protocol change you'd like your team to tackle together.



## Titer talk

Jeff Werber, DVM, owner of Century Veterinary Group in Los Angeles, has seen his share of anti-vaxxers in his veterinary clinic. In fact, he's a bit of an anti-vaxxer himself. *Not* the kind who doesn't believe in scientific evidence or the control of infectious disease (settle down now), but the kind who questions the necessity of repeated vaccination over the life of an animal when research indicates that at least some vaccines confer long-term immunity.



Dr. Jeff Werber

To that end, Dr. Werber advocates for titer testing in place of unquestioning vaccination at every visit. "I suggest we do a titer test to check the animal's immune status, and if it comes back showing that the animal's unprotected, I'll give the vaccine for free," Dr. Werber says. "Clients love that, especially the ones who may be a little leery of giving vaccines unnecessarily."

In his 20 years of titering, Dr. Werber says he's never had a patient acquire a disease when its titer indicated immunity. He faces naysayers in the veterinary community, both on the clinical and business sides. But clinically, he's confident that the tests err on the side of patient safety when results are on the edge, and when it comes to recommending a \$50 titer test versus a \$20 vaccination—well, no one ever accused Dr. Jeff Werber of not being able to sell a service.

"Some of my colleagues have accused me of being a salesman," Dr. Werber says. "That's not really what this is about. If you recommend what you believe in and treat clients right, they're going to do what's best for their pets."

# Carprieve Caplets®

(carprofen)

## Control In The Palm Of Your Hand

Contact your veterinary products distributor  
or Norbrook, Inc. at (888) 705-0408 for  
information on availability  
for **Carprieve Caplets**.

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Abby Jones and Lola  
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• Available in 30, 60 and 180 count bottles  
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[www.norbrookinc.com](http://www.norbrookinc.com)

Observe label directions. For oral use in dogs only. Do not use in cats. As with other NSAIDs, rare but serious side effects involving the digestive system, kidneys or liver may occur. Such signs may include appetite loss, vomiting and diarrhea. Some of these side effects, in rare instances, may be serious, resulting in hospitalization or even death. Regular monitoring is required for pets on medication. Pet owners should be advised to discontinue treatment if side effects occur and contact their veterinarian. See product labeling for full product information.

**FOR VETERINARY USE ONLY** 0116-498-102A

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See brief summary on page 40.



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### CARPRIEVE® CAPLETS

(carprofen)

*Non-steroidal anti-inflammatory drug*  
For oral use in dogs only

**Brief Summary:** Before using please consult the product insert, a summary of which follows.

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

**INDICATIONS:** For the relief of pain and inflammation associated with osteoarthritis and for the control of postoperative pain associated with soft tissue and orthopedic surgeries in dogs.

**CONTRAINDICATIONS:** Carprofen should not be used in dogs exhibiting previous hypersensitivity to carprofen.

**PRECAUTIONS:** As a class, cyclooxygenase inhibitory NSAIDs may be associated with gastrointestinal, renal and hepatic toxicity.

The most frequently reported effects have been gastrointestinal signs. Events involving suspected renal, hematologic, neurologic, dermatologic, and hepatic effects have also been reported. Patients at greatest risk for renal toxicity are those that are dehydrated, on concomitant diuretic therapy, or those with renal, cardiovascular, and/or hepatic dysfunction.

Carprieve® Caplets is not recommended for use in dogs with bleeding disorders (e.g. Von Willebrand's disease), as safety has not been established in dogs with these disorders. The safe use of Carprive® Caplets in animals less than 6 weeks of age, pregnant dogs, dogs used for breeding purposes, or in lactating bitches has not been established.

#### WARNINGS:

Keep out of reach of children. Not for human use. Consult a physician in cases of accidental ingestion by humans. For use in dogs only. Do not use in cats. All dogs should undergo a thorough history and physical examination before initiation of NSAID therapy. Appropriate laboratory tests to establish hematological and serum biochemical baseline data prior to, and periodically during, administration of any NSAID should be considered. **Owners should be advised to observe**

**for signs of potential drug toxicity (see Information for Dog Owners, Adverse Reactions, Animal Safety and Post-Approval Experience).**

#### ADVERSE REACTIONS:

During investigational studies of osteoarthritis with twice daily administration of 1 mg/lb, no clinically significant adverse reactions were reported.

#### Post-Approval Experience:

The categories of adverse reactions are listed in decreasing order of frequency by body system.

**Gastrointestinal:** Vomiting, diarrhea, constipation, inappetence, melena, hematemesis, gastrointestinal ulceration, gastrointestinal bleeding, pancreatitis.

**Hepatic:** Inappetence, vomiting, jaundice, acute hepatic toxicity, hepatic enzyme elevation, abnormal liver function test(s), hyperbilirubinemia, bilirubinuria, hypoalbuminemia. Approximately one-fourth of hepatic reports were in Labrador Retrievers.

**Neurologic:** Ataxia, paresis, paralysis, seizures, vestibular signs, disorientation.

**Urinary:** Hematuria, polyuria, polydipsia, urinary incontinence, urinary tract infection, azotemia, acute renal failure, tubular abnormalities including acute tubular necrosis, renal tubular acidosis, glucosuria.

**Behavioral:** Sedation, lethargy, hyperactivity, restlessness, aggressiveness.

**Hematologic:** Immune-mediated hemolytic anemia, immune-mediated thrombocytopenia, blood loss anemia, epistaxis.

**Dermatologic:** Pruritus, increased shedding, alopecia, pyotraumatic moist dermatitis (hot spots), necrotizing panniculitis/vasculitis, ventral ecchymosis.

**Immunologic or hypersensitivity:** Facial swelling, hives, erythema.

In rare situations, death has been associated with some of the adverse reactions listed above. To report a suspected adverse reaction call 1-866-591-5777.

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Newry, BT35 6PU, Co. Down,  
Northern Ireland

102 OCT 2014





1



3



2



4

# 4 cool tools for hot dogs

In the dog days of summer, help your clients keep their pets cool.

## 1 A CHILLY SPACE TO REST

The Cool Pet Pad contains a special warmth-absorbing gel that's activated by the pet's own weight. As soon as Max lies down, his presence initiates a gentle cooling effect that lasts up to four hours. When the pad is removed, the cooling gel is recharged.

## 2 NOT TOO HOT TO TROT

The Ruffwear Swamp Cooler uses natural evaporative cooling to keep dogs cool. Clients soak the vest in cold water, wring it out and fasten it around the dog. Evaporative cooling exchanges the dog's heat as water evaporates from the coat's reservoir.

## 3 HYDRATE, HYDRATE, HYDRATE

Popware for Pets offers lightweight water cups that clip onto a pet's leash with a carabiner. The cup collapses to less than 0.5 inches thick, and the quick-release clip attaches to leashes, beltloops, purses, strollers and more.

## 4 A FROSTY ACCESSORY

Clients can fill the Chill Collar with water and freeze it to keep their pet cool. The collar stays cool for up to two hours outside or four hours inside. As the ice melts, pets can drink the water stored in the collar.

Find these and other more patient cooling products at [dvm360.com/warmingandcooling](http://dvm360.com/warmingandcooling).

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# URINE: CUP TO APP

It's a smartphone. No, wait! It's a urine analyzer! Wait, what?



## Urine for data?

Diabetes, urinary tract infections, bladder stones, dehydration, proteinuria ... So many reasons you might run a urinalysis. But first you've got to get the pet to the practice, then someone has to chase the kitty or pooch around the practice with a vaccine tray or a banana split boat or ... well, you get the point—more ideas at [dvm360.com/urineluck](http://dvm360.com/urineluck).

What if a concerned client could run a preliminary urine test at home and report the results to you? Or maybe run more frequent tests after diagnosis on your recommendation?

## Urine luck!

Enter Petnostics! The Petnostics Urine Collector is a ladle-like device to quickly collect urine. Then the pee is placed into a Petnostics collection cup with a urine test

strip integrated into the lid.

Now here's where it gets exciting: The urine strip on the lid starts changing colors when it comes in contact with the urine. Once the strip is activated, the pet owner can scan the lid with the Petnostics app. It guides the user through the analysis process and displays the test results. Best part—the app makes it easy for pet owners to share this data with you.

## Urine for cats

But wait, a ladle to catch tinkle from cats? You're thinking, "Won't work!" No worries. Just ask pet owners to use the Petnostics Hydrophobic Cat Litter for urine collection instead. Easy pee-sy.

NEW DATA

**Cerenia**<sup>®</sup>  
maropitant citrate

# Dog owners see the benefits in preventing perioperative vomiting

## Study finds comfort outweighs cost

 **99%**

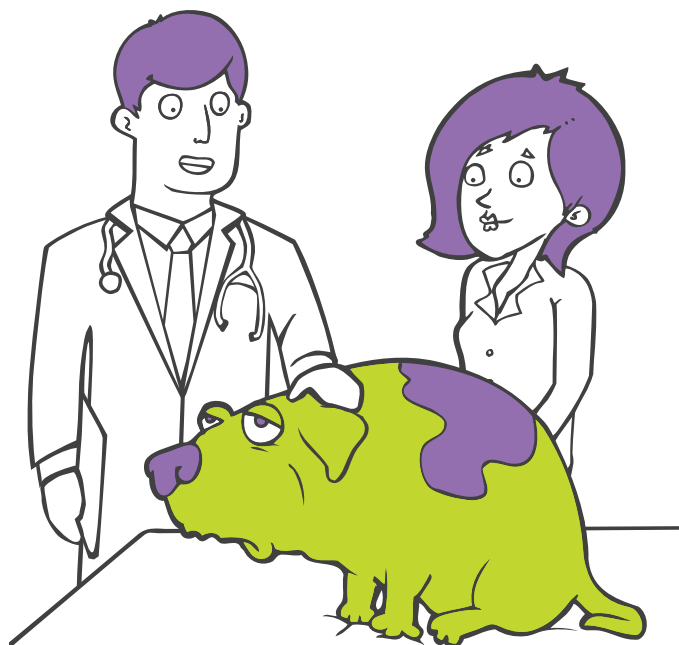
would definitely or probably choose treatment to prevent vomiting

 **90.4%**

had at least some worry about their dog vomiting post-surgery

 **91.3%**

are likely or very likely to opt for treatment even if it requires arriving one hour earlier for their appointment



**Make CERENIA<sup>®</sup> (maropitant citrate) part of your surgical protocols—  
with the flexibility of intravenous or subcutaneous administration.**

[cereniadv.com](http://cereniadv.com)

**IMPORTANT SAFETY INFORMATION:** Use CERENIA Injectable for vomiting in cats 4 months and older; use subcutaneously for acute vomiting in dogs 2 to 4 months of age or either subcutaneously or intravenously in dogs 4 months of age and older. Use CERENIA Tablets for acute vomiting in dogs 2 months and older, and for prevention of vomiting due to motion sickness in dogs 4 months and older. Safe use has not been evaluated in cats and dogs with gastrointestinal obstruction, or those that have ingested toxins. Use with caution in cats and dogs with hepatic dysfunction. Pain/vocalization upon injection is a common side effect. In people, topical exposure may elicit localized allergic skin reactions, and repeated or prolonged exposure may lead to skin sensitization. See Brief Summary of Full Prescribing Information on page 44.

<sup>1</sup>Kraus B, Cazlan C. Assessment of dog owner concern regarding perioperative nausea and vomiting and willingness to pay for antiemetic treatment [abstract]. In the Proceedings of the International Veterinary Emergency and Critical Care Symposium; Sep 18-22, 2015; Washington, DC.

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**zoetis**

## Brief Summary of Prescribing Information



### Antiemetic

For subcutaneous or intravenous injection in dogs and cats

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

#### INDICATIONS:

**Dogs:** CERENIA (maropitant citrate) Injectable Solution is indicated for the prevention and treatment of acute vomiting in dogs.

**Cats:** CERENIA (maropitant citrate) Injectable Solution is indicated for the treatment of vomiting in cats.

#### DOSE AND ADMINISTRATION:

Use of refrigerated product may reduce the pain response associated with subcutaneous injection.

#### Dogs:

##### For Prevention and Treatment of Acute Vomiting in Dogs:

**Dogs 2-4 Months of Age:** Administer CERENIA Injectable Solution subcutaneously at 1 mg/kg (0.45 mg/lb) equal to 0.1 mL/kg (0.1 mL/2.2 lb) of body weight once daily for up to 5 consecutive days.

**Dogs 4 months of Age and Older:** Administer CERENIA Injectable Solution intravenously over 1-2 minutes or subcutaneously at 1 mg/kg (0.45 mg/lb) equal to 0.1 mL/1 kg (1 mL/22 lb) of body weight once daily for up to 5 consecutive days.

In dogs that are actively vomiting, it is recommended to initiate treatment with CERENIA Injectable Solution. Thereafter, CERENIA Tablets may be used for the prevention of acute vomiting at 2 mg/kg once daily. (See CERENIA Tablets package insert for complete prescribing information).

**For Prevention of Vomiting in Dogs 4 months of Age and Older Caused by Emetogenic Medications or Chemotherapeutic Agents:** Administer CERENIA Injectable Solution intravenously over 1-2 minutes or subcutaneously at 1 mg/kg (0.45 mg/lb) of body weight one time, 45-60 minutes prior to use of emetogenic medications or chemotherapeutic agents.

#### Cats:

##### For Treatment of Vomiting in Cats 4 Months of Age and Older:

Administer CERENIA Injectable Solution intravenously over 1-2 minutes or subcutaneously at 1 mg/kg (0.45 mg/lb) equal to 0.1 mL/kg (0.1 mL/2.2 lb) of body weight once daily for up to 5 consecutive days.

The underlying cause of acute vomiting should be identified and addressed in dogs and cats that receive CERENIA Injectable Solution. If vomiting persists despite treatment, the case should be re-evaluated.

**WARNINGS:** Not for use in humans. Keep out of reach of children. In case of accidental injection or exposure, seek medical advice. Topical exposure may elicit localized allergic skin reactions in some individuals. Repeated or prolonged exposure may lead to skin sensitization. In case of accidental skin exposure, wash with soap and water. CERENIA is also an ocular irritant. In case of accidental eye exposure, flush with water for 15 minutes and seek medical attention.

In puppies younger than 11 weeks of age, histological evidence of bone marrow hypocellularity was observed at higher frequency and greater severity in puppies treated with CERENIA compared to control puppies. In puppies 16 weeks and older, bone marrow hypocellularity was not observed (see **ANIMAL SAFETY**).

#### PRECAUTIONS:

The safe use of CERENIA Injectable Solution has not been evaluated in dogs or cats with gastrointestinal obstruction or that have ingested toxins.

Use with caution in patients with hepatic dysfunction because CERENIA Injectable Solution is metabolized by CYP3A, CYP2D15 (dogs) and CYP1A (cats) enzymes (see **Pharmacokinetics**). The influence of concomitant drugs that may inhibit the metabolism of CERENIA Injectable Solution has not been evaluated. CERENIA Injectable Solution is highly protein bound. Use with caution with other medications that are highly protein bound. The concomitant use of CERENIA Injectable Solution with other protein bound drugs has not been studied in dogs or cats. Commonly used protein bound drugs include NSAIDs, cardiac, anticonvulsant, and behavioral medications. Drug compatibility should be monitored in patients requiring adjunctive therapy.

The safe use of CERENIA Injectable Solution has not been evaluated in dogs or cats used for breeding, or in pregnant or lactating bitches or queens.

#### Adverse Reactions:

##### DOGS:

In a US field study for the prevention and treatment of vomiting associated with administration of cisplatin for cancer chemotherapy, the following adverse reactions were reported in 77 dogs treated with CERENIA Injectable Solution at 1 mg/kg subcutaneously or 41 dogs treated with placebo:

##### Frequency of Adverse Reactions by Treatment

Adverse Reaction	Placebo (n=41)		CERENIA (n=77)	
	# dogs	% occur	# dogs	% occur
Diarrhea	1	2.4	6	7.8
Anorexia	0	0	4	5.2
Injection site reaction (swelling, pain upon injection)	0	0	3	4
Lethargy	1	2.4	2	2.6

The following adverse reactions were reported during the course of a US field study for the prevention and treatment of acute vomiting in dogs treated with 1 mg/kg CERENIA Injectable Solution subcutaneously and/or CERENIA Tablets at a minimum of 2 mg/kg orally once daily for up to 5 consecutive days:

##### Frequency of Adverse Reactions by Treatment

Adverse Reaction	Placebo (n=69)		CERENIA (n=206)	
	# dogs	% occur	# dogs	% occur
Death during study	4	5.8	10	4.9
Euthanized during study	0	0	2	1
Diarrhea	6	8.7	8	3.9
Hematochezia/bloody stool	5	7.2	4	1.9
Anorexia	2	2.9	3	1.5
Otitis/Otorrhea	0	0	3	1.5
Endotoxic Shock	1	1.4	2	1
Hematuria	0	0	2	1
Excoriation	0	0	2	1

Other clinical signs were reported but were <0.5% of dogs.

Adverse reactions seen in a European field study included ataxia, lethargy and injection site soreness in one dog treated with CERENIA Injectable Solution.

##### Post-Approval Experience (Rev. 2015)

The following adverse events are based on post-approval adverse drug experience reporting. Not all adverse events are reported to FDA CVM. It is not always possible to reliably estimate the adverse event frequency or establish a causal relationship to product exposure using these data.

The following adverse events reported for dogs are listed in decreasing order of reporting frequency

for CERENIA Injectable Solution: Pain/vocalization upon injection, depression/lethargy, anorexia, anaphylaxis/anaphylactoid reactions (including swelling of the head/face), ataxia, convulsions, hypersalivation, tremors, fever, dyspnea, collapse/loss of consciousness, recumbency, injection site reactions (swelling, inflammation) and sedation.

Cases of death (including euthanasia) have been reported.

#### CATS:

The following adverse reactions were reported during the course of a US field study for the treatment of vomiting in cats treated with 1 mg/kg CERENIA Injectable Solution subcutaneously once daily for up to five consecutive days:

##### Frequency of Adverse Reactions by Treatment

Adverse Reaction	Placebo (n=62)		CERENIA (n=133)	
	# cats	% occur	# cats	% occur
Moderate Response to Injection <sup>1,2</sup>	1	1.6	30	22.6
Significant Response to Injection <sup>1,3</sup>	1	1.6	15	11.3
Fever/Pyrexia	2	3.2	2	1.5
Dehydration	0	0	3	2.3
Lethargy	0	0	2	1.5
Anorexia	0	0	1	0.8
Hematuria	0	0	1	0.8
Hypersalivation	0	0	1	0.8
Injection site swelling	1	1.6	0	0

<sup>1</sup> The clinician observed and graded each cat's response to injection.

<sup>2</sup> Cat objected to the injection by retreating and vocalizing

<sup>3</sup> Cat objected to the injection by retreating, hissing, scratching, and vocalization

##### Post-Approval Experience (Rev. 2015)

The following adverse events are based on post-approval adverse drug experience reporting. Not all adverse events are reported to FDA CVM. It is not always possible to reliably estimate the adverse event frequency or establish a causal relationship to product exposure using these data.

The following adverse events reported for cats are listed in decreasing order of reporting frequency for CERENIA Injectable Solution: Depression/lethargy, anorexia, hypersalivation, pain/vocalization upon injection, dyspnea, ataxia, fever, recumbency, vomiting, panting, convulsion, and muscle tremor.

Cases of death (including euthanasia) have been reported.

To report suspected adverse events, for technical assistance or to obtain a copy of the SDS, contact Zoetis Inc. at 1-888-963-8471 or [www.zoetis.com](http://www.zoetis.com).

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>.

**STORAGE CONDITIONS:** CERENIA Injectable Solution should be stored at controlled room temperature 20-25°C (68-77°F) with excursions between 15-30°C (59-86°F). After first vial puncture, CERENIA Injectable Solution should be stored at refrigerated temperature 2-8°C (36-46°F). Use within 90 days of first vial puncture. Stopper may be punctured a maximum of 25 times.

**HOW SUPPLIED:** CERENIA Injectable Solution is supplied in 20 mL amber glass vials. Each mL contains 10 mg of maropitant as maropitant citrate.

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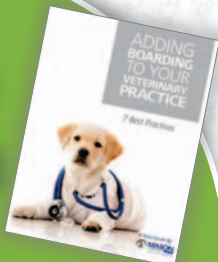
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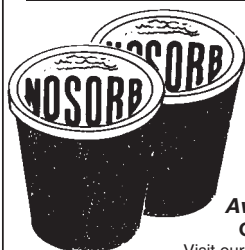


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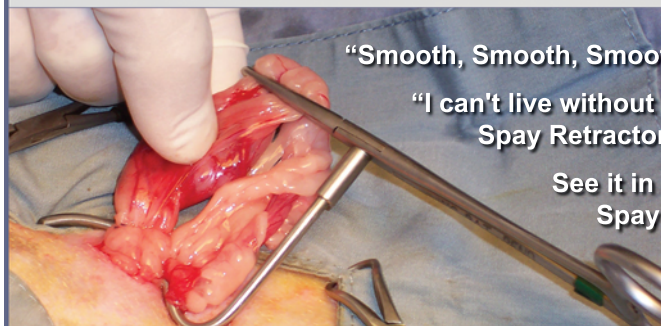
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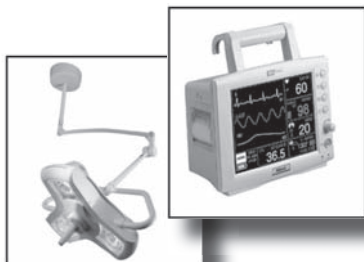
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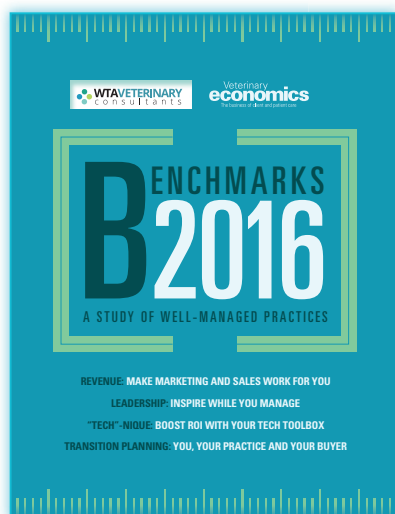
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“ASKING clients if they want pain meds.”



# Make your hospital a happier place for pets.

Your hospital is a safe place that's all about helping pets stay healthy. But to dogs and cats, a visit to the hospital can be stressful. Adaptil® and Feliway® are clinically proven to help reduce stress-related behaviors of dogs and cats during veterinary exams and hospitalization.<sup>1</sup> In fact, using Adaptil® and Feliway® in the hospital is recommended by the Fear Free<sup>SM</sup> initiative. When patients are less stressed, clients are less stressed and visits are happier for everyone.



 **FELIWAY®**

 **ADAPTIL®**

**To find out how using Feliway® and Adaptil® in your hospital can help reduce the signs of stress in pets, contact your Ceva sales representative.**  
**To find out more about the Fear Free<sup>SM</sup> initiative, go to [FearFreePets.com](http://FearFreePets.com).**

 /FeliwayUS

[Feliway.com/US](http://Feliway.com/US)  
[Adaptil.com/US](http://Adaptil.com/US)

 /AdaptilUS



## ENVIRONMENTAL ALLERGIES

# The best **offense** is a good **defense**

Hill's **FIRST & ONLY**  
**NUTRITION** with HistaGuard™  
Complex — formulated  
to reduce signs of  
environmental allergies by:

- Disrupting the internal allergy response
- Creating a barrier against future episodes

PRESCRIPTION DIET®

## Derm Defense™ with HistaGuard™ Complex



Your first defense against future allergy outbreaks with **HISTAGUARD COMPLEX**, a proprietary blend of bioactives and phytonutrients



Continuously **NORMALIZES IMMUNE RESPONSE TO ALLERGENS** with natural sources of polyphenols



Supports **SKIN REJUVENATION** with vitamin A, zinc and essential fatty acids

