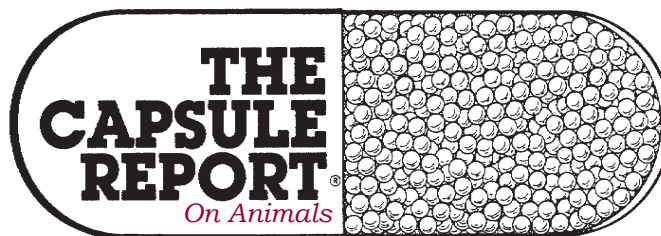


A digest of practical and clinically relevant information from this month's journals and proceedings



Small Animal/Exotic Edition

Our 30th Year

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### Combining topical otic products

Office combinations are made by many practitioners in an attempt to formulate their own topical otic products. Care should be taken when mixing commercial products, as many incompatibilities are possible. Many ingredients are effective at a narrow pH range and mixing may affect this. Some ingredients need to be present at a specific concentration and mixing products will lower the concentration delivered. Other combinations such as Synotic and Amikacin may cause a precipitate. Most commercial otic products contain many ingredients other than the active ingredients, such as vehicles and preservatives, which may not be compatible with other active ingredients. The advantage of office formulating is that the practitioner can select all the ingredients that will be needed for a specific case. If only two products are going to be mixed there is **another way to achieve the same or better effect**. Both products are dispensed and the client is instructed to treat with both products but at different times of the day. One example is for the case of *Pseudomonas* and *Malassezia* where Conofite lotion is used once daily in the afternoon and Gentocin Otic is applied in the a.m. and at bedtime. Allergic otitis externa with gentamicin resistant *Pseudomonas* may be treated with once daily Synotic for the potent antiinflammatory effect and twice-daily amikacin injectable used as ear drops.

Wayne Rosenkrantz, DVM, Dip ACVD  
Mich Vet Conf Procd, 01:10

### Effect of drugs on herding breeds

The effect of certain anesthetic drugs on herding dogs (e.g., Collie, Border Collie, Australian Shepherd, Shetland Sheepdog) is somewhat controversial. However, these breeds have a high prevalence (e.g., up to 75% in Collies in the US) for genetic mutation in the *ABCB1* (formerly *MDR1*) gene. *ABCB1* encodes P-glycoprotein, an adenosine triphosphate-driven pump that is an integral component of the blood-brain barrier and provides protection from toxic drug accumulation in body fluids, such as cerebrospinal fluid (CSF). In the Collie and other herding breeds, this ge-

netic mutation results in a defective pump that allows a select group of drugs to accumulate within the brain. Acepromazine and opioids, particularly butorphanol, are members of this drug group, and their **accumulation in CSF may cause marked sedation and respiratory depression**. When using these agents in susceptible breeds, the dose should be decreased by 25% and patients closely monitored for side effects.

Stephanie Krein, DVM and Lois A. Wetmore, DVM, ScD  
NAVC Clin Brf, 10:3, 2012

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### Rattlesnake vaccine

A canine vaccine against crota- lid venom is commercially available. The goal of vaccination is to allow the patient to form a full complement of active antibodies against various components of the venom, which may then be mobilized acutely in case of envenomation. As such, after the initial vaccination, a booster should be provided yearly, at the beginning of rattlesnake season, to maximize a positive response should envenomation occur. Vaccination is intended to minimize morbidity and does not preclude the need for immediate intervention and treatment, including treatment with antivenin. A vaccinated patient presented for rattlesnake envenomation should

**be treated as aggressively as an unvaccinated patient.** There is a current lack of clinical studies supporting the efficacy of the canine rattlesnake vaccine.

McGee Leonard, DVM  
So Cal VMA Pulse, Sep 2012

### fPLI interpretation

Veterinarians sometimes get a positive fPLI result and stop right there, assuming that the positive test definitively means pancreatitis instead of just putting it on the differential list, which is a big mistake. When the fPLI result is elevated, there probably *is* pancreatic inflammation but that does not necessarily mean that is why the patient is sick. Pancreatic inflammation might be occurring in a subclinical way, while the animal may actually have a foreign body or some other condition.

Todd R. Tams, DVM, Dip ACVIM  
NAVC Clin Brf, Nov 2012

# The Capsule Report.

## Mitral valve disease murmur

Once a murmur is ausculted in a dog with suspect mitral valve regurgitation, don't underestimate the information of the physical examination to help determine severity of the heart disease. First and foremost is murmur intensity. In most other types of heart disease, murmur intensity does not correlate with severity of disease, however in **dogs with MVD, murmur intensity does correlate with severity of disease**. The louder the murmur, generally the more advanced the heart disease. Like everything in clinical medicine, there are some exceptions but generally as you follow a dog longitudinally over time with MVD, the murmur intensity will get louder as the mitral valve insufficiency and heart enlargement progresses.

*Terri DeFrancesco, DVM, Dip ACVIM, Dip ACVECC  
VA Vet Conf Procd, 02:10*

## Myths in food allergy

Corn, wheat, and soy are usually innocent when accused of causing food allergy. Vilification of food grains as pet food ingredients may be myths started by small pet food companies as a way to compete with larger, established companies. It is not based on any data and there are excellent diets that contain one or more of those items. It may have been started by companies that wanted to distinguish themselves, to sell diets in a crowded marketplace. To say that these ingredients are "common causes of food allergies" is not very accurate. If a company puts "no soy" on the front of the bag, it invokes in people's basic brain stem the question, "what's wrong with soy?" Then they go home and look at their dog food bag, and soy is one of the ingredients. So they change foods without any real knowledge or thought put into why they are changing.

*Caitlin Heinze, MS, VMA, Dip ACVN  
Vet Pract News, Sep 2012*

## Excessive mouthing in puppies

Excessive mouthing (puppy's continuous desire to bite at humans' hand or arm during handling or manipulation) is often seen at the veterinary clinic during the physical examination. This is one of the biggest concerns of new puppy owners. Owners of puppies presenting with excessive mouthing, frequently wonder if this behavior could be a predictor of future aggressive behavior. A recent unpublished study evaluated the association between excessive mouthing in puppies and the development of aggressiveness in adult dogs. The origin, size, breed and sex of the puppy did not affect the presence of mouthing behavior. The retention of puppies in the household at one and 3 years of age was not affected by the presence of mouthing behavior in puppyhood and no significant difference was observed between the two groups regarding the develop-

ment of aggressive behavior at one and three years of age. This study suggests that excessive mouthing in puppies is not associated with the development of aggressive behavior in adult dogs. The owners of a puppy that displays excessive mouthing behavior can be informed of this data but there is still a need to provide them with information on appropriate management of this unwanted behavior.

*Martin Godbout, DVM, MSc, Dip ACVB  
148th AVMA Conf Procd*

## Sources of novel meats and starches

1) PetExtras.com - ostrich tendons. 30498 Wallmark Lk. Dr., Chisago City, MN 55013. (651) 257-8533. [www.petextras.com](http://www.petextras.com). 2) SitStay.com - rabbit ears, dried yams. 5831 N 58th St, Lincoln NE 68507. 800-748-7829. [www.sitstay.com](http://www.sitstay.com). 3) Exotic Meats.com. [www.exoticmeats.com](http://www.exoticmeats.com). 2245 148th Ave N.E., Bellevue, WA 98007. (800) 680-4375. 4) Hare Today - dehydrated ground rabbit. (814) 587-2178. [www.hare-today.com](http://www.hare-today.com).

*Susan G. Wynn, DVM  
N Am Vet Conf Procd, Vol 22*

## Acetaminophen (dogs only)

Despite it being one of the most common analgesics consumed by humans, veterinarians are not in the habit of utilizing acetaminophen in their patients. There appears to be a general concern about its safety in dogs, and while the drug is cleared somewhat more slowly than in humans, there is no toxicity data to suggest any particular tendency towards adverse effects in this species with judicious use (notably, avoiding in patients with hepatic disease including enzymes consistent with hepatocellular necrosis). Customary dosage ranges for acetaminophen are in the 10-15 mg/kg (e.g. a single standard-strength 300 or 325 mg tablet for dogs >70 lb) not to exceed TID or 5 days. Acetaminophen can be obtained OTC or as a Class III drug when combined with either hydrocodone (Vicodin) or codeine (Tylenol 2 or 3). In this instance the author typically prescribes acetaminophen 325 mg + hydrocodone 5 mg or acetaminophen + codeine 15 mg (#2) for large dogs >70 lb and proportionately lower doses for smaller dogs. These are Class III scheduled drugs.

*Mark E. Epstein, DVM, Dip ABVP (C/F), DAAPM, CVPP  
CVC, Wash DC, 2012*

## Levetiracetam for seizures

In a blinded trial involving dogs with idiopathic epilepsy refractory to treatment with phenobarbital and potassium bromide, 34 dogs were randomized to receive either levetiracetam or placebo for 16 weeks. After a four-week washout period, dogs were crossed over to the alternate treatment group for an additional 16 weeks. Dosages of phenobarbital and potassium bromide were not altered during the trial. Researchers found that while levetiracetam appeared to be safe and was well-tolerated, there was no difference in seizure frequency between levetiracetam and placebo groups when administered as an add-on therapy for refractory epilepsy. **The take-home message was that** Levetiracetam was not found to be effective in the treat-

ment of dogs with refractory epilepsy. But the power of the study was limited, and further study is warranted.

*K.R. Muñana et al.  
J Vet Intern Med 2012;26(2)*

## Treating Malassezia

Cats do not tolerate ketoconazole. Sporanox (itraconazole) is a useful, but very expensive antifungal used for the treatment of Malassezia dermatitis. It is the author's drug of choice for use in the cat. It comes in 100 mg capsules or in an oral solution. The capsules should be administered with food, while the oral solution may be administered on an empty stomach. Adverse effects are similar to ketoconazole, but less common and include hepatotoxicity, so in middle-age or older dogs, the author performs a serum biochemical profile to make sure the liver enzymes are within normal limits prior to starting therapy. Other adverse effects include anorexia, vomiting, and diarrhea. Based on one study, this drug is as effective administered daily as it is administered twice weekly (pulse-dose). By pulse-dosing this drug, the costs can be greatly reduced.

*Lynette K. Cole, DVM, MS, Dip ACVD  
MI Vet Conf Procd, 2012*

## Sources for homemade diets

Home-prepared diets are most often fed for a short period of time instead of for a lifetime. Pet owners usually get tired of constantly cooking or the animals gradually refuse to eat the diet. However, in rare cases owners have been known to cook healthy diets for their dogs and cats for many years with no adverse health consequences. A useful website with information about home-cooked diets for pets can be found at [http://www.vetmed.ucdavis.edu/vmth/small\\_animal/nutrition/faqs.cfm](http://www.vetmed.ucdavis.edu/vmth/small_animal/nutrition/faqs.cfm). To find veterinary nutritionists who perform consultations and can formulate diets, visit the website of the American Academy of Veterinary Nutrition: [http://www.aavn.org/site/view/58440\\_NutritionResources.pml](http://www.aavn.org/site/view/58440_NutritionResources.pml).

*Craig Datz, DVM, Dip ABVP, Dip ACVN  
CVC, Wash DC, 2012*

## Antibody titers

Are antibody titers a valid assessment of immunity? Depends! Specific limitations apply to titers when assessing the immune status of an individual patient. First, titers for CDV, CPV, and feline parvovirus (panleukopenia) correlate extremely well with immunity—dogs/cats that have a “positive” titer are considered immune. Second, a “negative” titer does not always correlate with susceptibility. Antibody is a glycoprotein and does dissipate over time. However, immunologic “memory” (B-lymphocytes) is retained for many years for these 3 diseases. Exposure to virulent virus in a previously vaccinated, antibody negative patient typically results in a rapid anamnestic ‘boost’ of antibody titer and a protective immune response. Annual or triennial boosters are merely a form of immunologic insurance for these 3 diseases. Most animals don't need it. For other diseases, antibody titers are *not* good correlates of protective immunity. Feline herpesvirus-1

and feline calicivirus titers can be obtained, but are not recommended for the assessment of the individual patient's immunity to those diseases. FeLV titers are not valid at all because of the lack of a valid test method. Leptospirosis titers are routinely performed but generally are used to define exposure/infection...not immunity.

*Richard B. Ford, DVM, MS, Dip ACVIM, Dip ACVPM (Hon)  
PA Winter Sem Procd, 02:11*

## Treating canine aggression

Treating canine aggression requires Management, Behavior Modification, and in some cases psychotropic Medication (the 3 M's.) Management recommendations usually include avoiding triggers that have elicited aggression in the past. Certain tools make this easier and depending on the case may include confinement, a Gentle Leader or other head halter, a front-attach, no pull harness, or a basket style muzzle. Prong collars, shock collars and flexible-length leashes are never recommended. It can also be helpful for owners to learn to recognize their dog's stress signals. This author often recommends the DVD “The Language of Dogs” by Sarah Kalnajs ([www.bluedogtraining.com](http://www.bluedogtraining.com)) for this purpose. In addition, it can be important for owners to understand the least threatening ways for people to interact with the dog, e.g. no direct eye contact, keep the torso from leaning over or towards the dog, don't pet the dog unless it approaches and solicited attention, and then **pet it on the chest or under the chin** instead of over the head and shoulders.

*Margaret M. Duxbury, DVM, Dip ACVB  
121st SD VMA Conf Procd*

## Ventilation in CPR

Several studies in which dogs and pigs were used to investigate out of hospital cardiac arrest(OHCA) have shown that ventilation during the first several minutes of CPR is not necessary. The limited importance of early ventilation can be explained by several mechanisms. First, pulmonary oxygen uptake during the no-flow or low-flow states of cardiopulmonary arrest (CPA) or CPR is very low. Second, reduced pulmonary blood flow allows an appropriate ventilation-to-perfusion ratio, even at low alveolar ventilation rates. Third, the lungs serve as a sufficiently large oxygen reservoir during the first few minutes of CPR when CPA is not caused by asphyxiation. Finally, chest compressions alone generate some degree of alveolar ventilation if an open airway is present. There is ample evidence that excessive positive-pressure ventilation by the rescuers occurs frequently, reduces efficacy of CPR, and is harmful. On the basis of this information and of recent clinical evidence in humans, and with the added intent of simplifying CPR by untrained bystanders, the AHA endorses compressions-

only CPR for witnessed OHCA of presumed cardiac origin in human adults. However, this recommendation does not apply to children or to individuals in which CPA is of noncardiac origin (eg, caused by apnea or asphyxiation). Because CPA in most veterinary patients falls into the latter category, the recommendation for compressions-only CPR cannot be universally extended to veterinary practice. Therefore, during CPR, **animals should always be ventilated as soon as possible**, but chest compressions should not be withheld if an airway is not yet established.

*Manuel Boller, Dr med vet, MTR, Dip ACVECC et al.  
JAVMA, 240:5*

### Effect of early separation from the bitch

Early litter separation might affect a puppy's ability to adapt to new environments and social relationships later in life. Dogs undergo a socialization period in which experiences and stimuli have a greater effect on temperament and behavior development than if experienced later in life. Starting around 3 weeks of age, puppies can become extremely distressed if placed in strange situations without their dams, littermates, and nest sites. This study examined early separation of puppies and the potential predisposition to misbehave as adults. Seventy adult dogs taken from their litter and adopted between the ages of 30 and 40 days were compared with 70 adult dogs adopted at 2 months of age. The likelihood to display destructiveness, excessive barking, fearfulness on walks, reactivity to noises, toy and food possessiveness, and attention-seeking was **significantly greater for dogs adopted earlier**. Lack of a secure social group may predispose dogs in the early separation group to exhibit avoidant and fearful behaviors; these dogs were 15 times more likely to exhibit fearfulness on walks, 7 times more likely to seek attention and react to noises, and 6 times more likely to bark excessively than dogs adopted later.

*L. Pierantoni et al.  
NAVC Clin Brf, Sep 2012*

### Atopy in the cat

Immunotherapy usually takes 6-12 months. Instruct the owner that if the cat is pruritic after an injection, the client needs to consult with you. The author has seen cases in which cats were pruritic after the first injection and subsequently worse on each injection thereafter, yet a veterinarian told the clients to continue administration. If a cat is pruritic after the first injection, it's possible the beginning vial is too strong and needs to be diluted. After an injection, you want to see the pruritus subsiding a bit and possibly increasing as the time approaches for the next injection. If the cat was pruritic after the injection but the pruritus subsided as the week went on, this signals the dose was too high. Sometimes during the patient's affected season, the dose should be reduced, particularly if what's in the injection is currently pollinating (visit [www.pollen.com](http://www.pollen.com)).

*Alice M. Jeromin, RPh, DVM, Dip ACVD  
DVM News Mag, 06:12*

### Bite wounds in birds

Birds sustaining bite wounds from dogs, cats, or other birds are frequently encountered. These wounds are usually of the crushing and tearing type and may require surgical repair or debridement. Mammal bites, especially cat bites, are true emergencies because of the pathogenic organisms, such as *Pasteurella multocida*, introduced into the tissues. Bite wounds should be flushed with warm saline or saline with chlorhexidine. Birds should be placed on systemic antibiotics with activity against *P multocida*. The penicillins or fluoroquinolones are often the antibiotic of choice. Birds suffering from bite wounds may present in shock and should be treated accordingly. It may be difficult to locate bite wounds within the feathers. For this reason, it is recommended to **place any bird with potential bite wounds on systemic antibiotics**.

*James K. Morrissey, DVM, Dip ABVP  
NY St VMA Conf Procd, 10:08*

### FeLV, core vaccine for kittens

Core vaccines should be given to every patient regardless of lifestyle. For cats, the core vaccines include: parvovirus (panleukopenia), herpesvirus (feline viral rhinotracheitis), calicivirus, and rabies. In the most recent AAFP guidelines, Feline Leukemia vaccine is also recommended as a CORE vaccine for kittens. The reason for recommending universal kitten-hood protection against FeLV is because cats under a year of age are at greatest risk for acquiring this disease. Virtually 100% of kittens infected with FeLV at 6 weeks of age or less will remain persistently infected for life. At 6 months of age, the risk of persistent infection drops to about 30% and this decreases further to 5%-15% after 12 months due to the development of natural resistance to this disease with age. When we ask clients about their kitten's environment, they may tell us that the kitten will be kept only indoors. However, the kitten may escape or the client may begin allowing the cat outside. The owner may not return the kitten for FeLV vaccination after the pediatric vaccination series has been completed even though the kitten's risk of exposure to FeLV has changed. By vaccinating the most susceptible individuals (young kittens), we will provide the best possible protection during the period of highest susceptibility to the disease. After a year of age, if the cat truly is kept only indoors without exposure to FeLV-infected cats, we do not need to continue FeLV vaccine administration. The author recommends that a non-adjuvanted FeLV vaccine that reduces the potential risks associated with adjuvants be used.

*Alice M. Wolf, DVM, Dip ACVIM, Dip ABVP  
121st SD VMA Conf Procd, 2012*