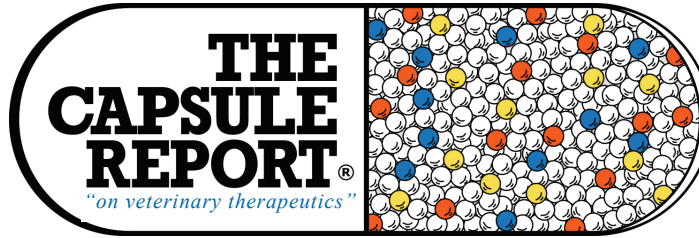


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## AT A GLANCE

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## Gabapentin for chronic pain

In addition to the antiseizure activity, gabapentin has been shown to be effective in treating neuropathic pain. Although no research studies are available regarding the use of gabapentin in dogs and cats for the treatment of chronic pain, many practitioners are using the drug for control of various pain syndromes. The dosage generally ranges from 1-10 mg/kg, PO, BID to QID, but dosages as high as 50 mg/kg have been anecdotally reported. Generally, gabapentin therapy is initiated at 3-10 mg/kg, PO, BID and dosages increased as necessary. The most common side effect is sedation and the dose of gabapentin should be reduced in patients that become sedate. Gradually increasing the dose over time generally eliminates the chance of sedation. If the patient is to be removed from gabapentin therapy (e.g., the patient is 'cured' or the gabapentin is not working), the drug should be gradually withdrawn over a period of 1-3 weeks (depending on the duration of therapy) to prevent rebound hyperalgesia. Gabapentin has a variety of uses in chronic pain and scenarios for addition of gabapentin

should include: • Patients with painful backs/necks • Any patient with known nerve damage • Patients with difficult to diagnose, difficult to characterize pain • Patients with long standing chronic pain

*Tamara Grubb, DVM, PhD, DACVAA  
Atlantic coast Vet Conf, 10:17*

## Diagnosis of cardiopulmonary arrest (CPA)

CPA is an important differential diagnosis for any acutely unresponsive patient. It is a clinical diagnosis based on the presence of unconsciousness, lack of breathing and absence of a palpable pulse. Regardless of the clinician's index of suspicion for CPA in an individual patient, a rapid assessment focused on ruling out CPA should be undertaken immediately in any unresponsive patient. A standardized approach based on evaluation of Airway, Breathing, and Circulation (ABC) will quickly identify the condition and allow immediate intervention should the diagnosis be made. Because the benefits of starting CPR immediately in a patient with CPA far outweigh the risks of performing CPR on an unresponsive patient not in CPA, the clinician should not delay starting CPR **in any patient in which there is a suspicion of CPA**. If CPA cannot be definitively ruled out, CPR should be initiated immediately rather than further diagnostic assessment. This is important as (1) several studies in human medicine have shown that pulse palpation is an insensitive test for diagnosis of CPA, and this may also be the case in dogs and cats, and (2) a large body of literature supports the notion that even short delays in initiating CPR in pulseless patients reduce the likelihood of successful resuscitation. Therefore, the ABC assessment should take no more than 10-15 seconds to complete.

*Daniel J. Fletcher, PhD, DVM, DACVECC  
23<sup>rd</sup> Int Vet Emergency & Critical Care Symp, 09:17*

## Sage advice from an astute clinician

Never Let Your Patient Die Without the Benefit of the Silver Bullet - (Steroids). Most of us tend to find this token bit of philosophy humorous or perhaps potentially dangerous. Although there are many diseases that can worsen as a result of repeated doses of glucocorticoid drugs, there are few (if any) that will progress to the patient's demise from one or two doses of this medication. This is not to imply that the indiscriminate use of glucocorticoid drugs is recommended; it is rather a reminder that animals can die of certain disorders such as non-septic meningitis,

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autoimmune thrombo-cytopenia, IMHA, and acute adrenocortical insufficiency if they do not receive glucocorticoid treatment. Certain empirical therapeutic judgments have their places in medicine, especially when we are practicing under various economic, emotional, and diagnostic constraints.

*Michael Schaer, DVM, DACVIM, DACVECC  
88<sup>th</sup> FL VMA Conf, 04:17*

## Diet-associated dilated cardiomyopathy (DCM)

These authors provide supplemental taurine for all dogs with possible diet-associated DCM. In dogs with a taurine deficiency, taurine supplementation is critical. In dogs with taurine concentrations within reference limits, it is unclear whether taurine supplementation is needed, and some patients have recovered with only a diet change. However, taurine supplementation may still have some benefits owing to other effects of taurine (e.g., antioxidant and positive inotropic effects). Although the optimal taurine dosage for dogs with taurine deficiency is not fully understood, the authors recommended 250 mg, PO, every 12 hours for dogs weighing <10 kg (22 lb); 500 mg, PO, every 12 hours for dogs weighing 10-25 kg (55 lb); and 1,000 mg, PO, every 12 hours for dogs weighing >25 kg.

*Lisa M. Freeman, DVM, PhD et al.  
JAVMA, 253:11*

## Signs of Cushing's

Polyuria and panting. Whether hypothyroidism or hyperadrenocorticism (HAC) is being manifested, those clinical signs seem to be the two that this author deals with most. The author usually tries to identify at least two indicators, but generally patients are presented with one and then we find another through history taking or the physical exam. This author doesn't find a lot of polyphagia. With PU or panting as the presenting complaint, when you roll the dog over, you might see thin skin and obvious abdominal veins. Calcinosis cutis, alopecia and other dermatologic lesions, and recurrent infections may also be discovered. Look for two of these. Then run chemistry and CBC. At that point you might want to conduct some sort of screening test. In dogs presenting for polydipsia/polyuria, HAC for some reason falls off the differential list. Sometimes clinicians jump to steps such as desmopressin trials and modified water deprivation tests without thinking of the more common tests. If you think you've got central diabetes insipidus, think again—and then think again a third time.

*Brett Wasik, DVM, DACVIM and Christopher Byers, DVM  
Clinician's Forum, May 2019*

## Medications when tympanic membrane is ruptured

The integrity of the tympanic membrane is critical in determining the best treatment options for a patient with otitis. The possibility of ototoxicosis is greatly enhanced if the medication is instilled directly into the middle ear. The best practice is to avoid topical therapy, if the tym-

panic membrane is torn or absent. However, there are some clinical indications, based entirely on anecdotal evidence, that vinegar:water (1:2) and enrofloxacin (parenteral formulation) are fairly safe.

*James O. Noxon, DVM, DACVIM  
Music City Vet Conf, 02:18*

## Diets associated with dilated cardiomyopathy (DCM)

In July 2018, the US FDA released a notice regarding reports from veterinary cardiologists of suspected diet-associated DCM in dogs not typically predisposed to DCM. Since then, the FDA has released an additional update on their investigation, reporting over 300 dogs with suspected diet-associated DCM as of November 2018. **Diets of concern** include pet foods containing peas, lentils, fava beans, tapioca, barley, chickpeas, other legume seeds, and potatoes as the main ingredient and/or exotic ingredients (e.g., kangaroo, duck, buffalo, bison, venison). Pet food from boutique companies (i.e., small manufacturers) that contain exotic ingredients (e.g., non-traditional protein sources) and/or are grain-free are also suspected to be linked to diet-associated DCM. It is important to note that diets that meet minimum nutrient standards and that are formulated based on Association of American Feed Control Officials recommendations do not necessarily ensure a balanced or regulated diet. There have been no documented cases of diet-associated DCM in dogs eating a commercial diet from an established major pet food company.

*Kirsten Pierce, DVM, DACVIM  
Clinician's Brief, May 2019*

## Administering colostrum to the neonate

If the neonate received colostrum in the last few days, hepatic enzymes gamaglutyl-transpeptidase and alkaline phosphatase will be very high. If absent in neonates less than 24 hours old oral plasma from a vaccinated adult can be administered. Older neonates lose the ability to trans-intestinally absorb immunoglobins and subcutaneous administration can be performed. In a kitten or small puppy 15 ml vaccinated adult plasma can be given as three boluses twelve hours apart. In the puppy 10 ml/lb is administered subcutaneously once. Care should be used in selecting the donor for kittens as the possibility of isoerythrolysis exist.

*Michael E. Peterson, MS, DVM  
AVMA Conf, 07:17*

## Canine mammary tumors and COX inhibitors

Canine malignant mammary carcinomas have varying degrees of cyclo-oxygenase expression. Because the expression of COX represents a potential therapeutic target, several studies have investigated the role of COX-1 and COX-2 in canine mammary tumors. COX-2 is over-expressed in tumors with anaplastic and inflammatory features, indicating that COX inhibitors may play an important role in the treatment of canine malignant mammary cancer. According to one recent study the use

of piroxicam in dogs with inflammatory carcinoma was found to **improve survival** and disease stability over traditional chemotherapy.

*Nicole Ehrhart, VMD, MS, DACVS  
VMX Jan 2019*

### Signs of Addison's disease

The signs of hypocortisolemia are vague and non-specific, such as lethargy or depression, and may wax and wane. Most dogs experience hyporexia or complete anorexia, along with changes in stool consistency. Some patients will vomit or manifest abdominal discomfort. Occasionally, more dramatic symptoms occur, including hypoglycemic seizures or regurgitation. Cortisol is essential for gastric mucus production and intestinal function; deficiency may result in melena and hematemesis. Aldosterone deficiency impacts sodium retention and results in progressive dehydration. Dogs are often polyuric due to sodium loss through the renal tubules. Until severe compromise occurs, most dogs will have some degree of polydipsia. Electrolyte disturbances cause weakness and tremors. Signs of cortisol deficiency usually precede those related to aldosterone deficiency, but may wax and wane in the early stages. Most dogs with hypoadrenocorticism (HOC) have been vaguely unwell for several weeks prior to diagnosis. Issues are often exacerbated by a stressful event, such as a visit to the groomer or a road trip. Patients will often perk up quickly if given fluids or glucocorticoids... **a history of "ain't doin' right"** for 2-3 weeks culminating in severe compromise is very suggestive of HOC.

*Audrey K. Cook, BVM&S, MRCVS, DACVIM  
NAVC, 02:17*

### Owners stress their dogs out

This study reveals, for the first time, an interspecific synchronization in long-term stress levels. Previously, acute stress, has been shown to be highly contagious both among humans and between individuals of other species. Here, long-term stress synchronization in dogs and their owners was investigated. Hence, the authors suggest that dogs, to a great extent, **mirror the stress level of their owners**. The results show that long-term stress hormone levels were synchronized between dogs and humans, two different species sharing everyday life. This could not be explained by either physical activity or by the amount of training. Since the personality of the owners was significantly related to the hair cortisol concentration (HCC) of their dogs, the authors suggest that it is the dogs that mirror the stress levels of their owners rather than the owners responding to the stress in their dogs. To the author's knowledge, this is the first study to show interspecies synchronization of long-term stress.

*Ann-Sofie Sundman et al.  
Scientific Reports, 9, Article number:7391 (2019)*

### Knowing when to start pimobendan

Pimobendan (Vetmedin) is a mainstay of therapy for canine mitral valve disease and DCM. Knowing when

to start pimobendan is important. It is not beneficial before the heart becomes enlarged. If you have a dog with a loud left heart murmur but no other signs and you take an X-ray, which shows the dog has a large left atrium due to degenerative mitral valve disease, but the owner refuses further investigations such as a cardiac ultrasound, then this author would probably start pimobendan. That is probably what most cardiologists would recommend if the owners don't want to go for an echocardiogram.

*Simon Swift, DVM  
Veterinary Practice News, 30:2*

### Making cautery less messy

Cautery can get a little messy when the patient's fur meets ultrasonic gel. Because this author uses cautery on almost every patient, she's found a way to make the process less annoying. Traditionally, we put ultrasonic gel on the ground plate to enhance conduction. To get the same benefits without the mess, this author soaks paper towels, washcloths or towels in water and place them between the pet and the ground plate. If the pet has a really thick coat, the author pours water between the patient and the ground plate to give it that contact. As long as you're not in surgery for eight hours and your plate dries out, this method gives you plenty of contact without any hot spots or sticky, matted fur. However, if ultrasonic gel is your thing, it's easiest to remove if you comb it out with alcohol later, as the alcohol will dissolve the gel.

*Jennifer Wardlaw, DVM, MS, DACVS  
DVM News Magazine, 49:7*

### Understanding the body language of dogs

UNDERSTAND species specific body language ASAP. There are many great resources for information on this. Remember, research shows the vast majority of people (veterinarians included!) do NOT understand species-specific body language even if they have worked with dogs for years, unless they have been specifically trained in it. The school of life is not enough. Here is one free and very helpful website option. <http://eileenanddogs.com/dog-body-language>. KNOW that adult supervision is not enough. Most young children are bitten by dogs they know in the presence of an adult. This can even be an adult who is "actively" attempting to control the situation. Poor prognostic indicators for a situation include: the adult doesn't understand species-specific body language or is trying to actively encourage the child and animal to interact. Many adults will actually hold fearful or aggressive animals still so children can pet them. This is a terrible idea. ACCEPT that animals are not humans and the majority of pets we keep do not enjoy intense physical contact such as hugging, kissing, putting faces close together, or lifting/carrying. In fact, these interactions can be painful, terrifying, and, at best, emotionally uncomfortable. For an excellent illustration of this, send your clients

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to [www.stopthe77.com](http://www.stopthe77.com) for a wonderfully educational short video. Parents should watch this video before showing it to their children. It's sad.

*E'Lise Christensen, DVM, DACVB  
103<sup>rd</sup> WI VMA Conf*

### Quick way to determine fluid rate

Although less precise, a reasonable approximation for dogs is to set the patient's hourly rate to their weight in pounds. For example, a patient weighing 45 pounds would receive 45 ml/hr. If a patient weighs less than 10 pounds, this rate should be doubled. For cats, the maintenance requirement for an average sized cat (~4.5 kg) is always around 10 ml/hr. These cheats are only recommended for healthy to mildly sick patients that are anticipated to be on fluid therapy for only 24-48 hours. They can also be a good starting point for the busy practitioner until fluid therapy calculations can be performed.

*Marc Seitz, DVM, DABVP  
Music City Vet Conf, 02:17*

### Free tick ID

Until recently there was no national data documenting the breadth and diversity of ticks infesting dogs and cats in the U.S. With the help of veterinarians across the country, an ongoing study at Oklahoma State University is changing that. First launched in 2018, the **Show Us Your Ticks** project has already identified more than 11,000 ticks from veterinary patients in 49 of the 50 states. Submissions will be accepted through 2020. The overarching goal of the project is to characterize the species and stages of ticks infesting pets in various geographic regions, providing real-time, local data about the tick risk faced by different communities throughout the year. If you're interested in participating, everything you need to know—including submission forms and mailing instructions—can be found at [www.showusyourticks.org](http://www.showusyourticks.org). Ticks are welcome from all veterinarians, although submissions from the western U.S., where tick risk may be under-recognized, are particularly encouraged. Identifications and a list of diseases known to be transmitted by the species and the stages identified are provided by email within 24 hours of receipt of the ticks.

*Meriam Saleh, BS and Susan Little, DVM, PhD, DACVIM  
Vetted, Jun 2019*

### Persistent deciduous teeth

Persistent deciduous teeth are very common, especially in small and toy breed dogs. However, they can occur in any breed as well as cats. They create both orthodontic and periodontal problems if not treated promptly. It used to be believed that the persistent deciduous teeth caused the permanent tooth to become maloccluded. Studies have shown, however, that it is the permanent tooth erupting incorrectly that causes the deciduous to be persistent. It has been reported that orthodontic problems begin within two weeks of the permanent canines starting to erupt. This is due to the deciduous tooth being in the place that the adult wishes to occupy. The periodontal issues

occur due to a disruption of the normal maturation of the periodontium. When there is a persistent deciduous tooth, one area of the periodontium is not attaching to the permanent, therefore the periodontal attachment in that location will not be normal. It has been reported that the damage begins within 48 hours of the permanent teeth starting to erupt! Therefore, the adult tooth does not need to be completely erupted for these problems to occur, and they should be extracted as early as possible, do not wait until six months of age to perform the extractions along with neutering. In fact, this author recommends that the owners of breeds prone to retain their teeth be instructed to watch for eruption of the permanent teeth and to present the patient for therapy as soon as this occurs.

*Brook A. Niemiec, DVM, DACVD, DEVDC,  
38<sup>th</sup> SDVMA Conf, May 2019*

### Antacid therapy in cats with CKD

Administration of proton pump inhibitors (PPIs) has recently been demonstrated to be associated with an increased risk for development of chronic kidney disease (CKD) in humans. Antacid use is common in veterinary medicine, and many patients are prescribed antacids without clear indication. Although a common practice among veterinarians, use of antacids to treat nonulcerative GI disease is **not warranted**. Cats with CKD are thought to be at increased risk for GI ulceration; however, several recent studies have shown that these cats rarely develop ulcers and often have more neutral gastric pH than cats with normal kidney function. Despite this, many veterinarians continue to administer antacids to cats with CKD. Routine prophylactic use of antacids in patients with CKD is not indicated. Their use should be reserved for patients with evidence of GI bleeding (e.g., melena, iron deficiency) or esophagitis. Twice-daily administration of a PPI is the most effective protocol for neutralizing gastric acid in cats with GI ulceration.

*J.D. Foster, VMD, DACVIM  
Clinician's Brief, May 2019*

### Blocking the 'field' of surgery with local anesthesia

Local anesthetic drugs (LA) can be administered around the incision or directly into the incision. It is not true that lidocaine in an incision causes a delay in healing. In humans the overall preponderance of data including several systematic reviews supports the ability of incisional blocks to improve a number of outcome measures including patient comfort, reduction in use of opioids, earlier discharge, and diminished chronic pain states. Intraperitoneal bupivacaine has demonstrated safety and a positive effect in cats at 2.0 mg/kg and dogs up to 4.4 mg/kg undergoing ovariohysterectomy. This is supported by multiple studies of similar techniques in humans having laparotomy. In humans intra-peritoneal (and even intrapleural) infusions of bupivacaine are used to alleviate pain from pancreatitis. The bupivacaine is diluted in saline and left in as a final abdominal lavage. In a closed cavity (chest or abdomen), the bupivacaine can be injected through a catheter.

*Mark Epstein, DVM, DABVP, DAAPM, CVPP  
AAFP Fall Conf, 10:17*

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### Hints for a fear-free practice

While we should clean our stethoscope more often for infectious diseases, what this author is more worried about is the buildup of fear pheromones on the stethoscope, otoscope head (not cone) and accompanying battery pack, as well as tourniquets, nail trimmers, etc. After every usage, these basic tools-of-the-trade should be cleaned with Rescue wipes, and then wiped down with species-specific pheromone wipes (Adaptil for dogs and Feliway for cats).

*Marty Becker, DVM  
CVC Kansas City, 08:17*

### Rabies vaccination guidelines in your state

Of all the vaccines currently licensed for use in dogs, rabies vaccine is the only vaccine that, in most States, is required by law. But the laws governing rabies and rabies immunization vary from State to State...and can even vary within a State. Confusion over the interpretation of (and access to) current State law can easily lead to mistakes and inappropriate actions on the part of the veterinarian (dog bites to humans; dogs exposed to a known or suspect rabid animal; actions by the veterinarian if the patient is "currently vaccinated" or is overdue, and much more). This newly introduced section of the Canine Vaccination Guidelines offers veterinarians rapid access to critical information (via link to: [www.rabiesaware.org](http://www.rabiesaware.org)) on several "must know" issues, all of which have been validated by public health officials in respective States.

*Richard Ford, DVM, MS and Link Welborn, DVM, DACVP  
VMX, 02:18*

### Treatment of perianal fistula

Treatment involves systemic cyclosporine (5 to 10 mg/kg/day) and topical 0.1% tacrolimus ointment. Systemic antibiotics are initially needed to treat the secondary bacterial infection, and concurrent prednisone can be used to reduce inflammation at presentation. If the pet doesn't demonstrate a complete response to initial therapy, a diet trial may be needed to rule out concurrent cutaneous adverse food reactions.

*Melissa Hall, DVM, DACVD  
DVM News Magazine, May 2019*

### Online sites for prey toys for cats

Opportunities to express hunting behavior are a basic need for a cat. If a cat doesn't have the opportunity to hunt, toys meeting appropriate criteria are small (prey-sized), make high-pitched squeaks or cheeps and move in a rapid, unpredictable fashion. The Indoor Pet Initiative offers an informative piece on choosing the correct toy for an individual cat: <http://indoorpet.osu.edu/cats/basicneeds/prevpreEindex.cfm>. Allowing them to hunt for their food (bowl) or using a feeding toy are mentally stimulating activities. Examples of feeding toys include: Cat Activity Fun Board ([www.traininglines.co.uk/cat-activity-fun-board-3397-0.html](http://www.traininglines.co.uk/cat-activity-fun-board-3397-0.html)). FUNkitty Egg-Cersizer: ([www.petsafe.net/search?q=egg-cersizer](http://www.petsafe.net/search?q=egg-cersizer)). Aikiou Stimulo ([www.aikiou.com/stimulo-cat-bowls-and-feeders/](http://www.aikiou.com/stimulo-cat-bowls-and-feeders/)).

Catit Design Senses Food Maze (<http://usa.hagen.com/Cat/Feeding/Accessories/50745>). NoBowl ([www.nobowlcat.com](http://www.nobowlcat.com)).

*Margie Scherk, DVM, DABVP  
Music City Vet Conf, 02:17*

### Sedating a feline heart patient

This patient (7-year old male neutered Maine Coon cat: grade 3/6 left parasternal heart murmur) has been presented to investigate the etiology of the heart murmur, and he begins to growl with extended restraint. The use of feline friendly restraint (no scruffing, using an e-collar, using Feliway) is recommended. Butorphanol (0.3 - 0.4 mg/kg) with either acepromazine (0.005 - 0.01 mg/kg) or a very low dose of dexmedetomidine (1 - 3 µg/kg) is effective. Higher doses of acepromazine may be detrimental if severe LV hypertrophy or hypertrophic obstructive cardiomyopathy (HOCM) is present. Higher doses of dexmedetomidine have been shown to be safe and effective in cats with known HOCM.

*Randolph L. Winter, DVM, DACVIM  
VMX, 02:18*

### Caring for the KCS patient

Regular cleaning with sterile saline (e.g. eye wash) or a warm washcloth and water to remove accumulated discharge will improve comfort level. Facial tissues and paper towels do not work well as they tend to shred. The ocular discharge can be difficult to remove as it is very tenacious. Soaking the area is helpful as are several commercial products (e.g. Blephagel) specially formulated to help break up the discharge. Owners need to dry the periorcular area thoroughly after cleansing to prevent moist dermatitis.

*Wendy M. Townsend, DVM, MS, DACVO  
Emerald Coast Vet Conf, 07:17*

### The inadequacies of home-prepared diets

The object of this study was to evaluate home-prepared maintenance diet (HPMD) recipes for cats and compare the nutritional profiles with National Research Council recommended allowances for essential nutrients for adult cats. Recipes from 114 HPMDs (obtained from books and online sources) were used. A desire to provide a diet that is perceived as superior to commercial pet food in one or more aspects has resulted in the use of home-prepared diets. The results of the study: Problems with nutritional adequacy were identified in all evaluated HPMD recipes. Appropriate formulation of HPMDs requires specialized knowledge of nutrition and use of computer software to avoid potentially harmful nutrient deficiencies. A complete diet history, including details of the specific types and amounts of the ingredients and any supplement-type products, preparation instructions, and amount of the diet fed to the cat in question should be obtained at every visit, to identify patients at risk for problems related to consumption of an unbalanced diet.

*Sarah A. Wilson, DVM et al.  
JAVMA, May 15, 2019*