



Expert information on medicine, behavior, and health in collaboration with a world leader in veterinary medicine

THIS JUST IN

FDA's Look at DCM

Investigations are ongoing

Dr. Steven Solomon, the FDA's director of the Center for Veterinary Medicine, recently explained where the FDA is on understanding what factors may contribute to the sudden increase in non-hereditary DCM (dilated cardiomyopathy) cases that began to appear in 2019.

Dr. Solomon says that science appears to indicate that non-hereditary DCM is a complex medical condition that may be affected by the interplay of multiple factors such as genetics, underlying medical conditions, and diet.

The FDA has not taken regulatory action against or declared any specific pet food products unsafe or definitively linked to DCM. They are exploring additional avenues about ingredient levels, nutrient bioavailability, ingredient sourcing, and diet processing to determine if there are any common factors. They asked pet food manufacturers to share diet formulations.

"If there is one point I want to drive home," he says, "it's that the best thing you as a pet owner can do is to talk to your veterinarian about your dog's dietary needs based on their health and medical history . . . this is an 'ongoing, collaborative, multidisciplinary scientific venture.'"



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Humans May Infect Pets with COVID-19

If you're infected, someone else should care for your pets

A study from the University of Guelph looked at pets of owners who had been ill with or tested positive for COVID-19. Swabs from 17 cats and 18 dogs were taken within two weeks of a confirmed coronavirus infection or symptoms in their owners. Blood samples came from eight cats and 10 dogs whose owners had been diagnosed with SARS-CoV-2 infections within the past 14 days. The eight cats were believed to have had a respiratory illness about the same time their owners were ill and had antibodies. Two dogs had antibodies and one had a respiratory illness.

From the report in *HealthDay*: "These preliminary results suggest that a substantial proportion of pets in households of persons with COVID-19 become infected," says



Evidence is appearing that people may infect pets with COVID-19.

Dr. Dorothee Bienzle, a professor of veterinary pathology at the University of Guelph. So far, all scientific evidence suggests transmission from people to their pets and not the other way around. To our knowledge, the only situation in which an animal is suspected of having served as a source of COVID-19 infection in people is during outbreaks in mink farms in both Europe and the United States. With this evidence comes our recommendation that if someone is sick with COVID-19, a different member of the household or a friend should take care of the pets until the owner has recovered. ■

5 THINGS

Get the Most Out of Eye Ointments

Tricks to help you get the desired results

- 1** Bottles of eye drops and tubes of eye ointment are generally small because you don't need much of these medications and having leftover eye medicine is not always a great idea, as the chance of it becoming contaminated is significant.
- 2** If the medication label says to use one drop, that is all that is needed. If it's an ointment, you can use an amount equal to a small grain of rice, advises Shelby Reinstein, DVM, DACVO, on Vet Girl.
- 3** If your dog is on multiple topical eye medications, wait at least five minutes between dosing. Otherwise, the first medication may be "washed out" or heavily diluted by the second one.
- 4** When you try to give the eye medication, position the dog so she can't back away from you, such as in the corner of a room. Consider using treats: Have the treats in one hand and get ready to administer the medication with the other. If you have a choice between drops and ointment, go with the ointment. It's easier to get this on the pink tissue in the eye than it is to squirt a drop right in.
- 5** Dogs who develop primary glaucoma usually have it in just one eye at first. In time, the other eye develops glaucoma. The medication timolol may delay the disease in the second eye for months or even years. ■

Monitoring Your Puppy's Growth For Health

A rapid weight gain can set the stage for future problems

A large cooperative study looking at dogs from the United Kingdom and from the United States reinforces that proper nutrition and avoiding obesity is important for canine health.

A series of evidence-based growth charts, based on bodyweight, were developed for dogs across five size categories. Researchers conducted a study to compare the growth curves depicted by this set of standards with the patterns of growth in dogs that were healthy, had abnormal body condition, or had various diseases known to be associated with abnormal growth.

They found that dogs with very rapid weight gain tended to be overweight or even obese by 3 years of age. These dogs were also at higher risk of orthopedic problems associated with weight such as osteochondritis desiccans, hip dysplasia, and elbow dysplasia. Almost all the dogs were on a balanced diet, so this was truly "over nutrition," being given too much of a good thing.

Study co-author and Professor of Small Animal Medicine at the University of Liverpool Alex German says, "We know optimal growth is crucial for the future health and wellbeing of dogs, as many of the health issues that appear during early life are associated with poor weight management. The results of this study suggest that these growth charts can identify healthy growth as well as patterns of growth signaling possible health problems. We hope that veterinarians and owners will find these evidence-based growth standards easy to use, helping puppies to keep in shape and starting them on the right path for their adult life."

Obviously, your growing dog needs appropriate and adequate nutrients, but overfeeding can contribute to a number of health problems later in life. ■

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0238521>



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Dog Brains Do Not Have Specific Face Areas

Unlike human brains, they do not contain face-sensitive areas

Even though dogs gaze into man's eyes, dog brains may not process faces as human brains do. A new study suggests that the canine visual system is organized differently. Faces constitute a critical part of communication for humans and other primates, so much so that faces have a special status in their visual system. Areas in the face network, like the fusiform face area, activate specifically to faces. Dogs care about faces, too, but they may not have face areas, according to the study.

The researchers used fMRI to compare the brain activity of humans and pet dogs as they watched brief videos of other humans and dogs. Human brains showed a preference for faces, meaning that some visual areas had greater activity in response to a face compared to the back of the head. A subset of these regions also displayed species preference, with increased activity in response to viewing a human over a dog. In contrast, dog brains only showed species preference. Visual areas had greater activity

in response to seeing a dog over a human, and no activity difference between seeing a face vs. the back of the head. ■

Bunford, N., et al. "Comparative Brain Imaging Reveals Analogous And Divergent Patterns Of Species- And Face-Sensitivity In Humans And Dogs." *The Journal of Neuroscience*, 2020; JN-RM-2800-19 DOI: 10.1523/JNEUROSCI.2800-19.2020.



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**Send reader questions
and letters to the editor:**

DogWatch
535 Connecticut Ave.
Norwalk, CT 06854-1713
dogwatcheditor@cornell.edu

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Big Sandy, TX 75755-8535. 800-829-5574

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Worry or Wait: Gut Sounds

Stomach rumblings can be concerning

You're settled in, quietly reading with Fido asleep at your feet when you hear a bunch of gurgles coming from the dog. What's that?

Stomach or, more often, intestinal rumblings are gas percolating through the intestinal tract. Air in the stomach tends to come up as burps and some dogs are "master burpers." Gas in the large intestines may come out as flatulence, and some dogs can clear a room.

Gas can build up in the intestinal tract in a variety of ways. Gas tends to get in when your dog swallows air. Dogs who rapidly gulp their food down often inhale air at the same time. Stressed dogs may also tend to have stomach noises or borborygmi (gurgling).

Some dogs will generate internal gas as a reaction to foods they are intolerant of or sensitive to. The colon has a normal collection of bacteria that help to break down nutrients, thereby generating gas. What foods cause more gas buildup is an individual dog situation. For some dogs, soybean or wheat may generate more gas; others react to rice and potatoes.

Be aware that unusual gut sounds

could be a prelude to vomiting or, more commonly, diarrhea. Watch your dog and be prepared to hustle him outside.

You can help control gas production by feeding multiple small meals instead of one or two large ones. Use a slow feeder or food-puzzle game to slow down your dog's consumption. Separate dogs for meals so one dog isn't hurrying to avoid another dog coming over or to get to someone else's food.

If your dog seems to have a lot of borborygmi and has other clinical symptoms, consult your veterinarian. For instance, dogs who eat spicy foods or raid the trash may experience loud gut sounds, flatulence, vomiting, and/or diarrhea. If your dog has made a trash raid, observe him closely. Lethargy or a painful abdomen also could indicate a serious problem. Food poisonings can cause a fever.

Inflammatory bowel disease could cause

increased gut sounds. Vomiting and diarrhea with increased gut sounds also could mean a gastrointestinal infection. A decrease in normal gut sounds can occur with an obstruction—a foreign body or a mass—in the gastrointestinal tract, although usually, you'll also notice vomiting and weight loss.

The most important thing is to know your dog's normal. If your dog has lots of gurgling every evening but no other signs, that is likely his normal. If his gut sounds are generally quiet and suddenly you can hear his stomach growling from across the room, then a veterinary visit may be in order, especially if he shows any other clinical symptoms (see also "Yes, the Dog Did It," February 2020). ■



Be especially alert for GI changes if you've caught your dog in the trash.

Gastrointestinal Illness Food Trials

This ongoing Cornell study offers hope

The Cornell College of Veterinary Medicine has an ongoing study on treating persistent gastrointestinal problems, or chronic enteropathy, with dietary changes. The results so far have been positive with some dogs returning to healthy weights, and others have regained glossy coats after being nearly hairless.

Most dogs with these persistent gastrointestinal problems have a form of inflammatory bowel disease called lymphocytic plasmacytic enteritis. Up to 80% of dogs with the disease respond well to changes in the food they eat. Veterinarians commonly prescribe foods that are more easily digestible or lack problematic ingredients, such as some proteins believed to provoke an inflammatory response. More recently, pet-food companies have created hydrolyzed diets in which the proteins are chemically "smashed" into smaller pieces to potentially avoid stimulating the animals' immune systems.

"But no one really knows why or how these diets work or why the original diet caused clinical signs," says Kenneth Simpson, professor in the College of Veterinary Medicine's Department of Clinical Sciences and lead investigator. "We don't know the optimal way to manage those dogs."

The study began in 2018. Dogs are separated into three groups: two receiving hydrolyzed protein diets and one control group eating a high-quality maintenance mixed-protein diet.

All the dog food contains the same balance of carbohydrates and protein.

The researchers are also studying a separate group of dogs with more severe cases, dogs who suffer from protein-losing enteropathy. About half of dogs with this disease die. These dogs receive either of the two hydrolyzed diets, with the primary goal of increasing their interest in eating the new diet and gaining body weight.

The results so far have been positive but surprising. "Conventional wisdom would suggest that the hydrolyzed-diet dogs would do better and dogs on the intact mixed-protein maintenance diets would fail to respond," says Simpson. Yet at three months, almost all dogs, regardless of their diet, have had positive responses.

Why changing diets has such a dramatic effect on dogs with chronic gastrointestinal disease remains unclear. Simpson hypothesizes that "the positive responses . . . are not a simple allergic response to intact protein. Perhaps nonprotein ingredients or additives may be causing adverse reactions."

Simpson hopes that in-depth analyses of the participants' gut bacteria and metabolism will provide additional insights to improve diagnosis and therapy. "Chronic diet-responsive enteropathy is one of the most common diseases we see," he says. "Once we've analyzed the evidence thoroughly, I hope we'll be able to make rational recommendations." ■

This article is adapted from "CVM clinical trial yields positive yet puzzling outcomes," by Olivia M. Hall, and printed in the Cornell Chronicle.

End-of-Life Guidelines

Advice for making difficult, emotional decisions

One of the only drawbacks to our pets is that their lifetimes are shorter than ours. That means at some point we will need to face their loss. Depending on size, breed, and simply luck of the genetic health draw, your dog may live from 10 to 18 years of age. We all hope that we will simply wake up one morning to find our beloved dog has passed to the foot of the Rainbow Bridge peacefully in his sleep. Rarely are families that lucky. Instead, you usually must make some tough choices. End-of-life (EOL) guidelines can help families to make difficult decisions at an emotional time.

The American Animal Hospital Association (AAHA) developed guidelines to help owners and veterinary staff deal with some of these hard decisions. While there is no need to choose a pet cemetery plot when you get your new puppy, it does make sense to think about these choices when you have a senior pet.

A good starting point is the AAHA's Animal Hospice Care Pyramid. From bottom up, this pyramid looks at your dog's physical wellbeing, his social wellbeing, and his emotional wellbeing.

Physical wellbeing can be the easiest to outline. You need to consider your dog's mobility, his ability to eat and drink, his ability to eliminate wastes, his ability to keep himself clean and comfortable,

and his ability to have a reasonably pain free existence. These conditions will depend to some extent on his underlying health status and any chronic illnesses he may have. In addition, your ability to assist him, his tolerance for human help, and your financial capabilities may all factor in. The size and personality of your dog will also factor in here. Carrying a small dog outside to eliminate may not be a big deal. Carrying a St. Bernard in and out is another story. You may easily be able to carry your Chihuahua, but if he hates to be picked up and tries to nip, you should think about that.

Reassess your dog's physical activities in light of his age and any health problems. He may not be able to run agility or climb mountains on a weekend hike with you. However, he may truly be happy with just a sedate walk around the block twice a day, getting to stop and sniff when he wants. Be prepared to adjust your expectations to fit his comfort.

Social wellbeing includes interacting with you and other members of his "close circle" plus interactions with other family pets. Can he play, or does he even want to? Do his favorite toys get a reaction? Do his eyes light up when you pick up a tennis ball? Is he avoiding other dogs in the family? Be aware of subtle or overt aggression by other dogs towards him.

Emotional wellbeing can be more difficult to measure.

Does your dog seem happy? (Anthropomorphizing is about the only way we can judge some of this.) Does your dog seem to still enjoy life? It may seem strange to discuss the dignity of our pets, but it is one of those "you know it when you see it" situations. Stress is another important factor. Some pets become stressed when they realize they now have physical limitations. A well house-trained dog may be upset by "leaking accidents" when he is sleeping, for example.

When discussing these situations, remember that each animal is an individual with a unique set of circumstances surrounding their existence and their care. There is no "one size

fits all," and you need to clarify in your mind what you feel is most important for your dog. After all, you know him better than anyone else. It is vital that you have a good relationship with your veterinarian so you can sit down, use an entire office visit if necessary, to discuss what health problems your dog has, a realistic prognosis, a realistic (both in terms of your ability and time as well as your finances) hospice or palliative care program, and how to handle the very end of life.

Hospice vs. Palliative Care

Hospice care is different in some ways from palliative care. Definitions for veterinary medicine have come down from human medicine. The goal of both is to keep the patient comfortable and as pain-free as possible. Palliative care generally starts with diagnosis and overlaps with treatment. So, your dog may be getting radiation for a cancer, but he would also get palliative care to help him eat, drink, and remain pain-free.

Hospice, on the other hand, tends to start when the end is in sight and treatment has ended. For human patients, a life expectancy of six months or less is a general guide for switching to hospice care. For pets, the goal is to keep the pet at home and comfortable until a natural death or euthanasia occurs. Dr. Alicia Brown (Cornell 2013) emphasizes looking for quality and pain-free time versus length of time.

Obviously, if you are looking at end-of-life decisions, your dog has a terminal illness. The first step is to look at treatment for his illness and decide how aggressive you want to be.

For example, if he has chronic kidney failure, will he tolerate receiving subcutaneous fluids from you at home? Are you comfortable giving him subcutaneous fluids? If both you and your dog are OK with this procedure it can be helpful. If it amounts to a wrestling match, panic on both your parts, and nips to you, then this is not quality time. You don't want your dog to run and hide whenever he sees you coming.

Can you encourage him to drink more in other ways? Adding flavoring to his water bowl? Mixing some warm water in with his meals? You may need to come up with some creative ideas based on what your dog likes. Some dogs will drink more if there are treats floating in the water bowl.

"Euthanasia is one of the most unselfish and most courageous decisions you will ever make," says Deb Eldredge, DVM (Cornell 1980). "You are accepting your heartache in return for a safe and humane ending for your pet. This is a decision made out of love."



Back to the hospice-care pyramid, start with the physical wellbeing of your dog and consider these factors:

Safety and Environment: Social considerations may vary even more with an individual dog. Your dog may now want to nap in a sunbeam on the floor instead of doing a five-mile hike in the morning. If he no longer enjoys playing with your other pets, do they realize and respect that? If not, you will need to be his advocate and prevent them from bothering him. He may want a solitary game of fetch with you rolling the ball for him in place of the rollicking free for all fetch games in the yard with long throws and other dogs involved.

Mobility: Can your dog walk? If not, will he let you carry him or set him up in a cart? If he fights those actions, is it worth it for either of you to face that daily struggle?

If mobility is a problem, consider getting some ramps to place around the house. Ramps are excellent for helping arthritic dogs get into and out of your car and to avoid steps into or out of your house. You may be able to borrow a ramp from friends who have had senior dogs. If you have a lot of stairs to get your dog outside to eliminate consider the "pee pads" made for puppies to save you both a struggle. Even senior dogs can also be trained to use a litterbox—just make sure he can step over the edge!

Discuss with your veterinarian which joint supplements or osteoarthritic pain medications might help your dog. If your dog is already on these supplements, you may need to adjust dosages or switch to a different medication for improved results.

Pain Management: Choosing the right pain medication for an individual dog is not as simple as checking off a box. Just as some people respond to aspirin and others to acetaminophen, different dogs will respond to different drugs. You may need to do trials of a couple medications or combo of medications to find the ideal fit for your dog.

Virtually all medications come with some side effects, or at least the possibility of side effects. You need to weigh these against your dog's overall comfort. Once again, you also need to look at your part in this. Can you easily pill your dog? How about once a day versus two or three times a day? Can you get a flavored compounded medication into him or mix it with his food? Will he eat Pill Pockets or pills hidden in cheese or peanut butter?

Nutrition: Mealtimes can be a challenge as well. Your dog needs to eat. For some conditions and some families, use of an in-place feeding tube might be the best solution for a dog's final weeks. Other dogs may fight and rip out the tubes. If your dog has to wear a cone to keep a tube in place, how does he handle the cone? Your dog's health problems may suggest a certain diet is best, but if your dog won't eat it, it does no good. You may have to choose between feeding his choices and giving him what might be "best for him" health-wise.

Hygiene: Can your dog eliminate on his own? If not, can you express his bladder and possibly administer enemas as needed? There should be no guilt if you cannot. If your dog is at that stage, his time is limited, and he may not want the intense handling necessary for those procedures. If he is urinary incontinent, is he comfortable with the frequent cleaning needed to prevent sores and ulcers from developing?

While the thought of evaluating your dog's emotional wellbeing may seem difficult at first, most owners intuitively

Canine Quality of Life Scale

The HHHHMM Quality of Life Scale

Canine caregivers can use this scale to evaluate the success of their Pawspice program. Grading each criterion using a scale of 0 to 10 will help caregivers determine Quality of Life for sick dogs. Score criterion:

H: 0 - 10 HURT - Adequate pain control, including breathing ability, is the first and foremost consideration. Is pain successfully managed? Is oxygen necessary?

H: 0 - 10 HUNGER - Is the dog eating enough? Does hand feeding help? Does the patient require a feeding tube?

H: 0 - 10 HYDRATION - Is the patient dehydrated? For dogs not drinking or eating foods containing enough water, use subcutaneous fluids once or twice daily to supplement fluid intake.

H: 0 - 10 HYGIENE - The patient should be kept brushed and cleaned. This is paramount. Check the body for soiling after elimination. Avoid pressure sores and keep all wounds clean.

H: 0 - 10 HAPPINESS - Does the dog express joy and interest? Is the dog responsive to things around him (family, toys, etc)? Does the dog enjoy being petted? Is the dog depressed, lonely, anxious, bored, afraid? Can the dog's bed be near the kitchen and moved near family activities so as not to be isolated?

M: 0 - 10 MOBILITY - Can the dog get up without help? Is the dog having seizures or stumbling? Some caregivers feel euthanasia is preferable to a definitive surgery, yet dogs are resilient. Dogs with limited mobility may still be alert and responsive and can have a good quality of life if the family is committed to providing quality care.

M: 0 - 10 MORE GOOD DAYS THAN BAD - When bad days outnumber good days, quality of life for the dying dog might be too compromised. When a healthy human-animal bond is no longer possible, caregivers must be made aware that their duty is to protect their dog from pain by making the final call for euthanasia. The decision needs to be made if the dog has unresponsive suffering. If death comes peacefully and painlessly at home, that is OK.

*Total= * A total score >35 is acceptable Quality of Life for maintaining a good Canine Pawspice. (Created by Dr. Alice Villalobos, www.pawspice.com.)

Reprinted with permission from author Alice Villalobos, DVM, a founder of the Veterinary Cancer Society and a pioneer of hospice care for pets. Now retired, this 1972 graduate of the University of California at Davis School of Veterinary Medicine and former president of the Society for Veterinary Medical Ethics (svme.org) believes, "Veterinarians have to communicate compassionately yet frankly with clients regarding options for pets with cancer and other terminal diseases."

sense how their dogs are doing. A dog who has urinary incontinence and doesn't enjoy being bathed regularly may give off a sense of "unhappiness" over his situation. You can sense frustration in the dog who has lost most mobility and clearly wants to go somewhere.

Consider, too that many senior dogs start to resist grooming. Can you shave him? Have you tried other grooming tools such as wooden pin brushes versus the standard metal ones?

Your goal should be for your dog to have more "good" days than "bad" days. It is important for you to be his advocate with your veterinarian. Together, you can come up with a plan for his end of life that works for your unique situation.

When It's Time

Planning for end of life sadly means deciding if you want to try for a "natural" death or to go with euthanasia when it is apparent that you can no longer keep your dog happy or comfortable. Veterinarians know that a "natural" death is usually not pleasant. If your veterinarian feels that this is not an option for your dog he/she will advise you of that. The oath taken when becoming a veterinarian means that your veterinarian must advocate for a humane end of life.

Many veterinary clinics have special arrangements for euthanasias with a quiet time and place for the procedure. In some cases, your veterinarian may be able to come to your home or connect you to a veterinarian who provides that service. Often sedatives are given ahead of time so a catheter can be placed without discomfort. If you can stay with your dog, most dogs seem to appreciate the company of their families. If you are too distraught, that is OK, too. With sedation, your dog will be calm.

The passing is quick. Many animals show an instant peace right before they are gone. There may be a residual breath after the dog is gone. Bladder and bowels may be released, so you should be prepared for that.

Once your pet is gone, more decisions need to be made. Preferably, your family has decided ahead of time how to handle your dog's body. You might choose interment in a pet cemetery (some states allow home pet burials, some do not). Other people prefer a private cremation so they can take the ashes home. Again, whatever you choose, whatever is most comfortable for you, is right. ■

PEMF for Pain and Healing

This easy at-home treatment can accelerate recovery

While it may sound like science fiction, pulsed electromagnetic field therapy (PEMF) is very much real-life. More research is needed, but PEMF is a promising treatment option for certain injuries and conditions.

Pulsed What?

Let's break down that long name. PEMF devices work by pulsing electricity through a coil to create an electromagnetic field. When near a body, that field can induce an electrical current in the tissues. This in turn causes physical and chemical changes in the body. This field can't be seen or felt, making it a low-stress treatment for pain control and bone or tissue healing.

Studies in dogs have shown faster healing time of open wounds, some improvement for dogs with osteoarthritis, help for delayed healing and nonunion fractures, and pain control.

Other studies in humans and dogs with a variety of conditions have had conflicting results. More research is needed to narrow down exactly which conditions it is helpful for in dogs as well as the ideal dosages and treatment regimens. The good news though is that it is unlikely to do any harm.

The Assisi Loop

Assisi Animal Health is the powerhouse of PEMF therapy in pets right now and is an FDA-registered medical device company. Their products use targeted pulsed electromagnetic field (tPEMF) technology. The waveform accelerates tissue healing and reduces pain and inflammation in damaged soft tissue and bone. The targeted PEMF signals are "designed to generate a specific biological effect," according to Assisi. The electrical current created in the tissues results in an upregulation of nitric oxide, which is a natural anti-inflammatory molecule that occurs in the body.

The Assisi Loop is a simple loop that can be placed on or over the area to be treated and turned on. Treatments generally go for 15 minutes, and the device turns itself off when done.

The Assisi Loop has been evaluated in two peer-reviewed clinical studies. The most recent study was published in the *Journal of the American Animal Hospital*



PEMF may increase your dog's enthusiasm for going for a walk.

Association in 2019. It was a double-blind, randomized, placebo-controlled clinical trial on dogs with intervertebral disk disease (IVDD). The study found significant improvement in wound healing compared to placebo, a nearly 50% reduction in opioid administration, and no side effects.

In Practice

Alicia M. Brown, DVM, CVA, CCRP Cornell Class of 2013, practices small animal medicine at Village Veterinary Hospital in Canastota, NY. Dr. Brown says, "We use the [Assisi] Loop for a pretty wide variety of orthopedic conditions plus wounds/surgical sites to some degree. I'd say the majority of cases are arthritis related, but also IVDD. We're typically using it along with other therapies—LASER and/or NSAIDs, gabapentin, etc. and I feel the time to improvement really depends on severity and chronicity of the injury. Acute injuries respond faster than chronic pain—I'd say they should see some degree of improvement within the first 24 to 48 hours in a lot of cases."

Dr. Brown does not find tPEMF to be enough on its own for severe pain, so a multi-modal approach is usually best for these cases. "I do often recommend it for chronic pain management, particularly because people are able to use it at home and can easily increase the frequency for flare-ups of pain," she says. ■

Spitting Up After Drinking

The problem may be due to swallow problems

You noticed that your dog coughs or spits up water after drinking. Determining whether or not this requires veterinary attention depends on exactly what your dog is doing, how often it occurs, and if he is showing any other unusual signs.

Cough vs. Regurgitation vs. Vomiting

Most owners have no trouble identifying when their dog coughs—it's just like a human cough. If your dog coughs immediately after drinking, he may splutter a bit and spray some droplets around, but the basic motion and sound is like a classic cough.

Regurgitation is when the water abruptly shoots back out of your dog's throat and mouth. There is little warning, and it may look like if your dog had held water in his mouth and then just opened his jaws to spill it out. Usually the dog looks as surprised as the owner.

Vomiting is an active process and will be preceded by uncomfortable sensations that your dog feels as well as abdominal contractions that you will be able to see. The water will be vomited up after some heaving. If your dog is vomiting along with other signs of illness or continues to vomit, he should be seen by a veterinarian.

Chugging Water

A common cause of coughing and/or regurgitating after drinking is drinking too much, too fast. By chugging a bunch of water, your dog may not swallow all of it properly. This can cause transient irritation to the tissues of his throat and upper gastrointestinal (GI) tract. Gulping water, particularly if he is also panting after hard exercise, also can result in some water being aspirated into the trachea and lungs. Aspiration of water will trigger your dog's cough reflex to get the water back out of the trachea.

To slow your dog, offer small amounts of water at a time after exercise or at times when he often drinks a lot. Wait several minutes before offering more water until he is no longer thirsty. You also can use a slow-feeder bowl for water to slow him down, or put a ball in his water bowl so that he has to work around it as he drinks (Warning: This might get a little messy!).



Chugging water can irritate the dog's throat.

Another option is to add water to his food and offer a little water separately but frequently. Allow the kibble to sit in the water so it soaks up the liquid.

Megaesophagus

Megaesophagus is a condition in which the muscles of the esophagus don't function properly, resulting in stretching (or dilation) of the esophagus and poor transportation of food and water into the stomach. Anything that an affected dog eats or drinks can get stuck in the "weak" part of the esophagus and pool there until the dog regurgitates and spits everything back up. Regurgitation can occur immediately after eating or drinking or several hours later.

This condition is often idiopathic (no known cause) but can be inherited. Many affected dogs begin showing signs as soon as they are weaned or shortly thereafter, but it can also show up later in life. Megaesophagus can also be caused by a variety of neuromuscular disorders or trauma to the esophagus.

Radiographs (x-rays) are helpful for making a diagnosis of megaesophagus. A normal esophagus doesn't show up much on an x-ray, but a dilated esophagus that is filled with air will. Your veterinarian may feed your dog a barium solution and then take several x-rays as he swallows. Barium shows up bright white on a radiograph, allowing your veterinarian to observe how your dog's esophagus expands and contracts as the barium travels down to the stomach (this method is also useful for finding obstructions and tumors in the GI tract).

There is no cure for megaesophagus, and affected dogs are at high risk for aspirating food and liquids into their lungs because of the frequent

regurgitation. This condition can be managed by feeding a liquid diet (easier to flow through the esophagus) with the dog in a vertical position and by keeping the dog vertical for five to 10 minutes after eating to ensure that everything gets into the stomach.

Collapsing Trachea

Most common in toy breed dogs, a collapsing trachea is when the normally rigid cartilage rings of the trachea are able to fold in on themselves. The dog will then cough due to the irritation and as an effort to pop the trachea back open again. Affected dogs often cough when they are excited or pulling against their collars (causing the trachea to collapse), but coughing can also be stimulated by drinking. Dogs with a collapsing trachea should wear a harness instead of a collar, and treatment may include cough suppressant medications, sedatives, and/or weight loss if the dog is overweight.

Laryngeal Abnormalities

Your dog's larynx includes the arytenoid cartilages (vocal cords). Their most important job is to snap shut when your dog swallows, preventing food and water from going down the trachea and getting in his lungs. When something is wrong with the arytenoids, your dog is at risk of aspirating water when he drinks, leading to a cough (and potentially other issues if he gets enough water in his lungs).

Problems with the larynx can include trauma and neoplasia, but one of the more common causes for laryngeal dysfunction is a condition called laryngeal paralysis. In laryngeal paralysis, one or more of the muscles that control the laryngeal cartilages becomes paralyzed and stops working. This means your dog's larynx may not be open or closed when it is supposed to be. He may aspirate water when he drinks, leading to a cough, and you may also notice a wheeze when he breathes, increased panting, and that his voice is more raspy.

Laryngeal paralysis is most common in senior medium-to-large breed dogs. Many cases are managed by limiting activity and monitoring closely for signs of aspiration. If the larynx is staying closed too much and hindering your dog's ability to breathe, he may be a candidate for a "tie-back" surgery to hold open the paralyzed cartilage.

Other potential causes of coughing or regurgitating water after drinking include esophagitis, cancer, and hiatal hernias. ■

No Repairmen, Says Mike

Rescue dog does not like people to come to the house

Q Mike is three years old, and I have had him since he was 15 months old. He was a rescue. He does not like anyone to come to the house. When a repairman comes, I put him in his crate in advance. I have tried giving him Composure, too. He becomes angry because he is locked in and tears holes in his bed, pulling out the stuffing. What can I do?

A Teach Mike that there is a secure location in your house where he can rest comfortably without anyone giving him eye contact or trying to touch him. Once you have the designated space, train Mike with treats to go lie down quietly in this location. He should have a long-lasting food dispensing toy like a Kong filled with cheese or peanut butter.

Before guests arrive at your house redirect Mike to his secure space and reward compliance with treats. It would be best if they called or texted rather than rang the door bell because Mike has been conditioned that the door bell means large scary beings are entering his house.

Over time, we would like him to learn that when people arrive he gets treats and that unfamiliar people won't bother him in his safe zone. Let people know by a sign or by responding to their text. "Dog in training. Please wait. I will be right

with you" to give you time to put him in a quiet room with the door closed before you open/answer the door.

Control at the Door

Eventually, you want him to be safe when visitors come. Teach him to go to a mat on command by walking him to the mat and rewarding him when all four paws are on the mat. After leading him to the mat a dozen times you can begin to say "Place." Now you can ask him to sit and stay on a mat when the bell rings. These are behaviors he already knows, but you should practice as you move farther from him and you answer the door.

Practice ringing the bell and tossing him a treat if he remains in a sit. Try to do this several times a day. Meanwhile, have a hook with a leash attached so you can go to the door without him when real guests come. Remember to give commands in a happy voice and to give tiny but delicious rewards as soon as he sits and after he has waited for the correct amount of time. Also, consider a cup outside the door with a note saying "Toss (do not hand) these to Mike."

Medication

I recommend sertraline (generic Zoloft). Side effects include gastrointestinal upset, loss of appetite, sedation, and trembling. If any of these occur, discontinue the drug and contact your veterinarian. Avoid Amitraz-containing products such as Preventic tick collars or Merial's Certifect while your dog is on sertraline. Other heartworm and flea/tick products are generally safe and well tolerated with sertraline, which takes a month to be most effective.

Fear of Thunderstorms

Medicine may help

Q My 4-year-old female Golden Retriever became afraid of thunder two summers ago when we were on vacation, camping in a travel trailer. Terrible storms with heavy rain and lots of thunder and lightning came through, and rain sounds in a trailer are intensified and very loud. Since then, we have had a problem. I really don't want to use drugs because I don't think they work anyway. My husband is a retired DVM (Cornell '69) and never saw effective results with drugs. Do you have any solutions?

A I am going to argue with you and your husband that there are drugs that help with storm phobias. The problem is that you can't predict when a storm is coming and once the storm has started it is too late for most medications to be effective. Fortunately, there is a relatively new medication, Sileo (dexmedetomidine) that works immediately. It is administered to the dog's gums (practice applying peanut butter or cream cheese to her gums every now and then).

For frequent storms, she may need an SSRI (specific serotonin reuptake inhibitor), which takes a month to reach full effect, but will help reduce her fear. When a storm is predicted, a Valium-like drug such as lorazepam can be given. It takes less than an hour to take effect, but it will not help if she is already frightened when you give it.

Of course, there are recordings you can play at low volume that consist of music and some thunder and rain sounds and come with directions on how to use them for desensitization. Also, a Thundershirt that may calm her by "hugging" her. ■

Do You Have a Behavior Concern?

Send your behavior questions to Cornell's renowned behavior expert Katherine Houpt, VMD, Ph.D., shown here with Yuki, her West Highland White Terrier. Email to dogwatcheditor@cornell.edu or send by regular mail to DogWatch, 535 Connecticut Ave., Norwalk, CT 06854-1713.



Coming Up ...

- ▶ Senior-Dog Grooming Issues
- ▶ Heart-Murmur Puppies
- ▶ The Bloat Emergency
- ▶ Is Telemedicine Here to Stay?

© HAPPENING NOW...

New Protein, Anyone?—Nestlé Purina is launching pet food that builds on alternative proteins to make better use of the planet's resources. The new line includes insects as well as plant protein from fava beans and millet.

Purina Beyond Nature's Protein will first be sold in Switzerland. Veterinarians and nutritionists at Purina have put together two recipes: one based on chicken, pig's liver and millet; the second

using insect protein, chicken and fava beans. The insect protein comes from black soldier fly larvae, which are already in use in animal feed in Europe.

Sniffy Walks—The *Washington Post* has echoed what we've said for years: Dogs like to sniff. Dogs enjoy "sniffy walks," says the report, where they are allowed to take as much time as they want to study scents and gain information about the world around them. ■