



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

## THIS JUST IN

### Dogs and Survival

#### Lower death risk for owners

**D**og ownership was associated with a 33% lower risk of early death for heart attack survivors living alone and 27% reduced risk of early death for stroke survivors living alone, compared to people who did not own a dog, according to two recent studies. In addition, dog ownership was associated with a 24% reduced risk of all-cause mortality and a 31% lower risk of death by heart attack or stroke.

"While these non-randomized studies cannot 'prove' that adopting or owning a dog directly leads to reduced mortality, these robust findings are certainly at least suggestive of this," says Glenn N. Levine, M.D., of the American Heart Association.

Given research demonstrating how social isolation and lack of physical activity can negatively impact patients, researchers in both the study and meta-analysis sought to determine how dog ownership affected health. Prior studies showed that dog ownership alleviates social isolation, improves physical activity and lowers blood pressure, leading researchers to believe dog owners could have better cardiovascular outcomes compared to non-owners. ■

Mubanga, M., et al. Dog Ownership and Survival After a Major Cardiovascular Event. *Circulation*:

Cardiovascular Quality and Outcomes, 2019; 12 (10) DOI: 10.1161/CIRCOUTCOMES.118.005342. *Science Daily*.



## Winter May Bring Dry, Itchy Skin

### A scratching, itchy dog is telling you he's miserable

**I**f your dog is itching, or you notice red skin and/or excessive dander, find the cause before applying topicals or giving a bath. Without the cause, you won't stop that aggravating itch-scratch cycle.

In the winter, the problem might be due to the dry, cold air, which might be helped by a house humidifier and more frequent brushing. Bathing will further dry out his skin, so that's not a likely solution. Your veterinarian may recommend a nutritional supplement, such as fish oil, to promote skin health.

Dry skin also can be caused by disease, including Cushing's, hypothyroidism, bacterial/fungal infections, parasites, and cancer, or it can be a reaction to something the dog is eating. Of course, parasites (fleas, ticks) and allergens are all possible causes. Some dogs are simply more prone to allergies than others.

"Genetics plays a big role in many of the skin diseases that veterinarians deal with. In many cases it's the breed that's the issue—for example, we see allergies in black, yellow, or chocolate Labs," says William Miller, VMD, Dipl ACVD, Emeritus, Professor, Clinical Sciences at the New York State School of Veterinary Medicine at Cornell.

A discussion with a veterinarian can help you determine the most likely causes of your dog's discomfort. ■



Winter can be a tough time for your dog, especially if he has sensitive skin.

## TRAINING

### Make Muzzles a Regular Piece of Equipment

#### It's important to train your dog to accept a muzzle

**N**o matter how sweet your dog is, a muzzle is a great thing to have in your emergency kit at home and on the road. It keeps everyone safe. If she becomes injured, she could bite out of pain. Muzzles are also handy if you have multiple dogs who don't get along, such as in a shelter during a natural disaster.

Introduce your dog to the muzzle now, working gradually in a positive environment, rewarding her for allowing you to put it on. "I do believe muzzling is a good solution and preventive measure, as it guarantees safety for adults, senior citizens, children, and other pets who cannot otherwise defend themselves should a similar situation arise," says Dr. Kaplan. "Muzzles are safe, not painful, and do not harm the animal wearing them while simultaneously providing a layer of safety for the community at large. Dogs that have chased or caused minor injuries to other dogs or people may have a stronger prey drive and/or are more easily triggered when outside and have the potential to cause even more harm if given the opportunity in the future. Prevention is easy and key." ■



A dog who is familiar with a muzzle will consider it no big deal.

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## New Test for Urinary Tract Infections

*The laboratory test will allow for a faster diagnosis*

Testing for and treating urinary tract infections can be a challenge for veterinarians. First, an infection must be identified and then the ideal therapy has to be determined. Many urinary tract bacteria already show resistance to various antibiotics, making it difficult to determine the best treatment without a culture and sensitivity test.

A company in England is now working with veterinarians and specialists at the University of Tennessee on a product called “U Treat.” Using the urine sample, an infection can be identified in five minutes. Then, a urine sample is tested further to identify which antibiotic will be effective against the bacteria that were found.

Bioluminescence techniques are used to remove host cell Adenosine triphosphate (ATP), an energy-carrying molecule, and then lyse bacterial cell walls to release bacterial ATP. The luminometer can then guide your veterinarian to the ideal antibiotic. Doing the susceptibility test takes about 45 minutes, so diagnosis and treatment can be determined in about an hour. This is much faster than having to send a urine specimen out for culture and sensitivity to determine the antibiotic.

Clinical testing was done on dogs and cats at the University of Tennessee overseen by Dr. David Bemis, who earned his doctorate (PhD) at Cornell. The U Treat system was both highly specific and highly sensitive. That means that there were few false positives or negatives.

Rapidly identifying an effective antibiotic reduces the likelihood of increasing bacterial resistance as well as bringing faster relief to your pet. Your veterinarian can send you home with the best antibiotic for your pet’s infection.

<https://www.vetsurgeon.org/news/b/veterinary-news/archive/2019/09/30/new-test-for-uti-in-cats-and-dogs.aspx>



## Coconut Meal for Pets

*The search for novel good ingredients continues to grow*

Some dogs love coconut, while others will think you’re a “coconut” for offering it to them. But it’s showing up as an alternative to other starches (grains, tubers, legumes) in some pet foods, according to an article by Greg Aldrich, Ph.D., in Pet Industry News. The coconut trend may be spurred by coconut’s growing following in the human-food market.

Coconut meal comes from the white coconut “meat” inside the husk after the liquid (milk) is removed. It is usually dried and has a shelf life of around six months in cool, dry storage. Currently, there are no standards for coconut meal as a dietary component for pets, which means things like protein and fat content can vary from batch to batch.

So far, dietary studies have been limited to pigs, which have different gastrointestinal tracts from dogs and cats. The lack of studies makes it difficult to say how available the nutrients in coconut would be and what the true benefits and risks are of this ingredient.

Certainly, it’s important to avoid processed coconut that is used for baking and as a sweetener for human products. Most of those versions have added sugar.

As for the value of its inclusion in pet food, Dr. Aldrich advises we practice “judicious use,” as we await information from more studies. ■



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# Canine Laryngeal Paralysis

*Voice changes and abnormal breathing sound the alarm*

It is easy to think your dog's voice is changing as he ages when his bark no longer sounds the same, but it's not wise. A change in voice could indicate laryngeal paralysis, which can affect his breathing, causing him to suffocate if left undetected and untreated.

If you look closely, you may notice he wheezes a bit when breathing, pants excessively, or has decreased exercise tolerance. These symptoms may come on gradually, making them easy to overlook, but this is a mistake. The sooner you have your dog evaluated the better.

Some dogs will develop megaesophagus (enlargement of the esophagus with decreased motility). In severe cases, a dog may go into respiratory distress with a blue color to the gums, gasping for air, and possible collapse. This is a veterinary emergency.

## It's the Larynx

Your dog's larynx, or voice box, is composed of right- and left-paired cartilages that connect the oral cavity to the trachea. When your dog is eating or drinking, the cartilages close to prevent your dog from inhaling food or water. When he is breathing, the cartilages open to allow air to pass through.

With laryngeal paralysis, the nerves that activate the muscles moving the cartilage are disrupted or the muscles themselves have atrophied and do not function properly. The dog is unable to breathe properly. Trauma, such as from constantly pulling on his collar when on leash, is a possible cause,



*Leash pulling, like this puppy is doing, can damage the larynx.*

but most commonly this is felt to be a neuromuscular disorder.

Generally laryngeal paralysis is a problem seen in medium- to large-sized senior dogs. Called geriatric acquired onset laryngeal paralysis and polyneuropathy (GOLPP), it is often seen in Labrador Retrievers, Golden Retrievers, Newfoundlanders, St. Bernards, German Shepherd Dogs, Greyhounds, and Irish and English Setters, although any dog can be affected. In some breeds, there is a genetic predisposition with early onset. Bouvier des Flandres, Siberian Huskies, Bull Terriers, and Dalmatians may show the congenital form of the disorder. Some of these dogs show clinical signs such as muscle weakness in the limbs (polyneuropathy) and neurologic problems with the esophagus as early as 6 months of age.

"There are many dogs that develop laryngeal paralysis as they age that do not seem to have further issues with generalized weakness," says Sarah Stephan DVM, Instructor in the Cornell Section of Neurology and Neurosurgery. The progression of GOLPP is slow and, since many dogs are elderly to begin with, the signs may not be evident before the dog dies of other causes.

## Diagnosis

Initial diagnosis requires observation of the larynx under sedation or with the use of an endoscope looking for abnormal movement or a lack of movement. Radiographs of the chest are usually taken to evaluate the dog for aspiration pneumonia and to look for evidence of megaesophagus. A neurological examination will be performed to detect any other signs.

## Treatment

Dogs in severe respiratory distress may need an emergency tracheostomy—surgically making a hole in the dog's neck and then placing a tube in it that allows them to breathe. A tracheostomy can be left in permanently, but requires extra diligence and maintenance to keep the tube in place and properly cleaned to prevent serious infections. This makes it a poor option.

Surgery is the best treatment for laryngeal paralysis. The most commonly performed surgery is the unilateral arytenoid lateralization or tieback. One side of the cartilage is pulled back with a suture, which reduces the chance for secondary aspiration pneumonia while still improving the airway flow for your dog. Many veterinarians refer these cases to a board-certified veterinary surgeon.

During post-surgery healing, barking should be minimized as best as you can. Your dog may benefit from getting his meals formed into small "meatballs" that he can swallow easily. An elevated feeding station may also reduce chances of aspiration.

Dogs who have had successful surgery go on to lead good-quality lives with some management changes to minimize risk of aspiration. Some dogs with the progressive polyneuropathy generally develop more signs within a year of diagnosis, however. "For the more generalized condition, it depends on the underlying cause but for autoimmune conditions we turn to immunosuppressive medications," says Dr. Stephan.

Be aware of your dog's normal respiratory patterns and sounds and report any abnormality to your veterinarian immediately. Caught early, the risk of aspiration pneumonia secondary to laryngeal paralysis can be reduced. Most dogs retain a very high quality of life post-surgery. ■

## What You Should Do

*If your dog has larynx problems:*

- ▶ Use a harness instead of a collar so there is less chance of pressure on the throat.
- ▶ Limit your dog's activity, especially in hot and humid weather.
- ▶ Change dietary plans to accelerate weight loss, if the dog is too heavy.
- ▶ Avoid allowing the dog to swim, as that increases the chances of him inhaling water.

## Hypothyroidism Not a Factor

**Hypothyroidism was long felt to be causative of laryngeal paralysis, but that theory has been discarded. While many dogs with laryngeal paralysis may be hypothyroid, it is more likely to be part of the generalized, probably immune-mediated, neuropathy.**



# Canine Health Insurance

*Avoid disappointment by choosing the plan that fits*

In August 2019, the American Veterinary Medical Association encouraged veterinarians to educate clients on pet health insurance, saying it “may be an important approach for the veterinary profession to continue to provide high-quality veterinary services.”

That’s because, as in human medicine, cutting-edge expertise, technology, and medicines are available, but the cost can put that needed care out of reach. According to the American Pet Products Association, veterinary costs increased 6.1% in 2018 and is expected to go up another 4.8% in 2019. The need for pet health insurance has never been greater.

## Cost vs. Coverage

You’ll find many insurance-company choices with competitive rates. The North American Pet Health Insurance Association ([www.naphia.org](http://www.naphia.org)) lists 20 insurers in its roster. Remember that monthly premiums should not be your only deciding factor and that possible



*Pet insurance can minimize one concern when your dog is in need of care.*

out-of-pocket costs and any excluded benefits should get your attention.

Out-of-pocket costs include deductibles and co-insurance. Co-insurance is the percentage of the covered fee that you need to pay. For example, a 70/30 policy means that the insurance will pay 70% of the allowed amount (which may or may not match your veterinarian’s bill, more on that

later), leaving you responsible for the remaining 30%. Consider that most cancer treatments quickly reach \$10,000 or more. A 30 percent co-insurance on \$10,000 is over \$3,300—and that’s on top of any deductible.

The North American Pet Health Insurance Association ([naphia.org](http://naphia.org)) says 80 percent is the most commonly selected co-insurance, which means the insurer pays 80 percent and you pay 20 percent of every claim.

Deductibles generally range from \$50 to \$1,000. Carefully read your contract to see how the deductible applies. Some policies issue a per-incident deductible instead of an annual deductible. With a per-incident \$250 deductible, for example, you must pay the first \$250 for each incident. With an annual \$250 deductible, you pay the first \$250 of the year’s claims.

Be aware that most veterinarians require you pay for your service up front and be reimbursed by the insurance company. While a few insurance companies will reimburse the veterinarian directly, few practices will accept that as payment.

Ask if there are any discounts available on your premium. Many insurers offer a 5 percent reduction on your premium for those with military backgrounds, signing up online, veterinarian-employee discounts, AAA, multiple insured pets, and more.

## What You Should Know

- ▶ **Illness coverage** takes care of expenses when your dog is sick. Be careful, though. There are sometimes specific limitations, especially for illnesses like cancer.
- ▶ **Accident coverage** covers your pet if he is injured, such as from swallowing something he shouldn’t eat. Accident-only policies are inexpensive because insurance is a risk-associated industry and the chances of your dog being hurt in an accident aren’t as high as him becoming sick.
- ▶ **Drug/prescription coverage** isn’t always included. No one can predict what medications your dog might need—nor what new super drug might be released tomorrow—so, if you can avoid limitations here, all the better. If your plan has a list of covered medications, bring that with you to veterinary appointments so you can be sure treatment options are covered by the insurance.
- ▶ **Alternative therapy and herbal treatments** are included in some plans, but most offer it as a rider. Look for things like hydrotherapy, acupuncture, and chiropractic work, which are rapidly gaining ground as viable rehabilitation and pain-control therapies. Most policies specify exactly what they will cover and who may administer the treatment.
- ▶ **Wellness coverage** means your dog’s routine care, like vaccinations, heartworm test, neutering, or dental cleaning may be covered. It’s usually only offered as a rider, and there’s a lot of variation among insurers. Many have caps on the amount they’ll pay for wellness/preventative/routine coverage.
- ▶ **Exclusions** will be spelled out in your policy. Read that section carefully before you sign and question any vague descriptions. If you can, get your questions answered in writing (one of the great things about email—you can print out the answer and tuck it away with your policy).

## Read the Policy

Sit down and consider the likelihood of things that might happen to your dog. For instance, Golden Retrievers have a high incidence of cancer. German Shepherd Dogs are prone to hip dysplasia. Papillons have dental problems. Will you have coverage for these illnesses if you need it?

Consider what you do with your dog, too. If he’s a sporting dog—agility, herding, flyball, dock diving—you should look carefully at the coverage for orthopedic injuries.

Read that long, boring policy carefully. Look to see exactly what is covered and what is not covered. Read every exclusion. If something is excluded that might be a concern for your dog, keep looking. Be sure your policy includes prescription-drug costs.

## Tricky Traps

Check the policy to find out if the insurer reimburses based on actual cost/fee or



## Not Really Insurance

Some companies offer “discount cards” for veterinary services for a low monthly fee. These are not insurance companies. You are paying them for negotiating with the veterinarians to accept the card. For some clinics, you may be able to do this on your own, especially if you are a frequent customer.

on a “reasonable and customary” fee schedule. Actual cost considers what is marked as the charge on your bill when you leave the veterinarian’s office. An insurance’s fee schedule is a ballpark pre-determined payment, often based on geographical area.

No pet health insurance company will cover pre-existing conditions, and most have a timeline before the coverage kicks in. This means if you sign up on Monday with a policy with a 14-day waiting period and Fido gets diagnosed with cancer on Tuesday, that policy will not cover the cancer.

Some insurers have incident caps, annual caps, and/or lifetime caps on how much they will pay out. These caps may keep your premium down, but overall caps are extremely frustrating. If chemo treatments cost \$10,000, but your per-incident cap is \$5,000, you will pay everything after that \$5,000 yourself.

Be sure you understand what your responsibilities are, too. Not only do you have to pay the monthly premium, but the company may require an initial veterinary exam. Most will not cover a disease that is preventable by vaccine, so you must keep vaccinations up to date. Ask the company what vaccinations they require. They also do not cover things like flea-protection, heartworm, and other preventative measures (a wellness rider may cover some of these things).

Not all policies cover the veterinarian’s office examination. Some only cover things like diagnostic tests, surgeries, and medications. The office call visit can run anywhere from \$50 to over \$250 for a specialist. If you’re the type who frequently takes your dog to the veterinarian just in case, you may want to zero in on a policy that covers these costs.

Be very careful of the words “medically necessary treatment.” While the insurance company has legitimate reasons for saying that—they shouldn’t have to pay for dental services just

because you don’t like the way your dog’s smile looks—sometimes it can erupt into a disagreement. You will need to appeal denials like that, armed with scientific proof, veterinary literature, and more to show that the claim was medically necessary. If you make a rational appeal, chances are you will win. However, expect to go to the second or third level of appeal to do so.

### Bottom Line

One of the most important things to look for is “continual coverage for chronic conditions.” Without that, you could find yourself out of luck if your dog gets cancer or diabetes. Make sure the policy will not exclude a chronic condition when it renews. Continual coverage is important because other policies may consider the condition “pre-existing,” if you try to switch carriers.

Prepare for increases in premiums as the years go on. Although most policies have limits on ages they will cover, the scope of veterinary technology continues to increase and the costs associated with care continue to rise, making pet health insurance a no-brainer. The wisest thing

## Dental Details

Some plans may require you to keep your dog up-to-date on preventive care. Read the details carefully, as this may include routine teeth cleaning by your veterinarian. This is understandable if you have dental insurance for your dog, but be sure it isn’t required just for everyday health.

Making sure your plan covers dental procedures is a good idea because your dog is likely to need dental cleanings and may require extractions or more involved procedures. This is especially true if you do not brush your dog’s teeth regularly.

to do is to enroll your dog as soon as possible, even as a puppy.

Finally, when you sign up, answer all the insurer’s questions honestly, such as age and history. They all require a veterinary exam before accepting your dog. If you fail to do this, your insurer may refuse to pay and, in the worst-case scenario, you may be held for insurance fraud, says the NAPHA. ■

## © TRAINING

## Hidden Genes in Purebred Dogs

### Why some purebred dogs look different

If you have a purebred dog, you likely can identify other members of the same breed based on physical traits and typical color patterns. But sometimes a puppy is born in a purebred litter that has a surprise trait. Rather than a flaw or mutation, the difference may be due to a hidden gene variant that happened to pop up in that particular puppy. New research from Purdue University’s College of Veterinary Medicine shows that some breeds of dogs have hidden traits.

For example, coat color genes have a significant amount of epistasis between them, meaning that what happens at one gene can mask what’s happening at another gene. Because of epistasis, dogs may still carry genes for a color pattern that is extremely rare to see in their breed. For example, tan points are considered undesirable by the Labrador Retriever breed standard. The genes involved in creating tan points are rare in Labs, but are still present in the gene pool, so sometimes litters are born that have puppies with tan points.

The same thing can happen with other traits. For example, up to 48 breeds possess a gene variant that results in being born without a tail. Even Dachshunds can be born without a tail due to genes, but it’s a rare event. ■

Dreger, DL, et al. True Colors: Commercially-acquired morphological genotypes reveal hidden allele variation among dog breeds, informing both trait ancestry and breed potential. PLOS ONE, 2019; 14 (10): e0223995 DOI: 10.1371/journal.pone.0223995. Science Daily.



The study found that many breeds have hidden genes that can cause some dogs to be born with tails and others without, just like in the Australian Shepherd.



# Warm-Up Routines

*Stretching before exercise isn't just for people*

**E**specially in winter, when your dog is probably as sedentary as you are, it's important to warm up your dog's muscles before beginning any exercise. With a proper routine before strenuous exercise, you may be able to help your dog avoid soft-tissue injury or muscle soreness from overuse.

## The Logic

Exercise, such as running hard or jumping, requires your dog's muscles to rapidly extend and contract while resisting the force of your dog's weight and movement. Muscles that are not prepared for exercise can be damaged if a contraction or stretch is too sudden and forceful and may even tear in extreme cases. The same stresses are applied to the joint capsule that encloses your dog's joints, such as his hips and stifles.

Doing low-intensity exercises and stretching before exercise can help to pre-stretch the muscle fibers and other tissues, loosening them up so they are ready for action. Activity warms the muscle bodies, making the tissues more extensible. Movement increases circulation to the muscles, providing nutrients and removing waste products from the cells at work.

We don't have definitive scientific data on warm-ups and stretching in dogs. "All literature is in people, not dogs," cautions Christopher W. Frye, DVM, Assistant Clinical Professor Section of Sports Medicine and Rehabilitation at Cornell University. "Some literature notes that [warm-ups] prevent injury for acute trauma to muscles and tendons, other literature doesn't."

Stretching can be beneficial for increasing flexion and extension. "Stretching several times a week routinely can increase joint ranges of motion in healthy individuals by even 5 degrees," says Dr. Frye. "This increase in motion may more likely be due to stretch tolerance (no longer uncomfortable) than to tissue lengthening. Interestingly, muscles and tendons can differ in their function, but often the muscle provides for more lengthening during stretch than a tendon as stiffer tendons are better for elastic energy storage and release for gait efficiency." So, while a proper stretching routine may help lengthen and loosen up



Look at the incredible athletic maneuver shown by this terrier playing Frisbee.

your dog's muscles, it is unlikely to affect his tendons.

But it matters how the muscles are stretched. "Stretching in some instances may decrease muscle-tendon power outputs for a period of duration after stretching," says Dr. Frye. Slow progressive stretching is usually better tolerated and achieves more favorable results than more sudden stretches.

Research in racehorses has shown that doing a warm-up before hard exercise increases aerobic metabolism, or the use of oxygen for energy sources. This results in less muscle soreness after exercise.

Dr. Frye reminds us that, "Stretching and warm-ups will not prevent chronic overuse injuries." Your dog's joints are still taking a hit each time your dog jumps up to catch a ball and lands hard and doing that repeatedly takes a toll and will eventually cause damage. A good warm-up may help to keep his muscles limber by preparing them for exercise, but it can't protect tissues from wear and tear. The same goes for abnormal motions, such as slipping on ice and twisting a leg.

## When to Warm Up

While research hasn't determined when you need to do a warm-up with your dog, the general rule of thumb is that exercise that will include intense activity, be that hard running, quick turns, or jumping, should include a warm-up. For dogs, this would mean activities

like chasing a ball or Frisbee, agility, jogging, flyball, or lure coursing.

Consider whether the activity your dog is about to engage in is equivalent to anything that a racehorse or human athlete might do. Think about scenes from the Olympics on television where you've seen numerous shots of athletes warming up before their events by doing stretches and low-intensity versions of the motions they will do in competition, gradually increasing in speed and force.

## Warm-Up Exercises

Warming up your dog's muscles can be simple. "I typically recommend light walking or jogging for five to 10 minutes before sprinting or agility events," says Dr. Frye. Start by walking your dog, then build up to jogging. Walking for a warm-up should be purposeful, without frequent stops to sniff.

You can also give your dog a body rub, rubbing all parts of his body from head to tail and toes. This increases awareness as you touch each region of the body and stimulates him, which will increase his heart rate and circulation.

Some behaviors that encourage your dog to use a variety of muscles include:

- ▶ Cookie stretches to each hip (use a treat to lure your dog's nose back toward his hip)
- ▶ Transitioning between sit, stand, and down positions (sometimes called "puppy aerobics")
- ▶ Bow (or a downward-dog stretch)
- ▶ Circles or spins in both directions
- ▶ Backing up
- ▶ Sidestepping in both directions
- ▶ Tugging (tug so that your dog's head comes out straight from his body rather than angled sharply upward, and avoid sharp jerks side to side)



Warm-up is essential in sports like dog agility that require a lot of speed and tight turns.



You can ask your dog to do low-intensity versions of the activity he is about to engage in. For example, if he will be doing jumps on an agility course, have him do some jumps at a lower height first, then go to full height at a moderate speed. If he is going to do some intense ball chasing with hard running and tight turns, start out with basic walking and trotting and then add in some turns.

The ideal warm-up may vary from sport to sport, depending upon what will be asked of him.

### Take Care Stretching

Dr. Frye warns, "Passive stretching when done on a dog by a person could cause pain, discomfort, or tissue damage if not accomplished properly or if there is unidentified underlying disease to the anatomy being stretched." Passive stretching is when you manipulate your dog's body to cause him to stretch.

Active stretching, on the other hand, is when the dog moves on his own to stretch his muscles. "There are some exercises to actively stretch in which a dog can walk over cavaletti rails set at elbow or knee height to increase range of motion," says Dr. Frye. "These exercises are nice as the stretch is essentially conducted at the patient's own volition and within their comfort range. Furthermore, when patients are actively stretching or using their muscles and nerves, they help establish better neuromuscular control as well as increase blood flow to the active areas."

Cavaletti can be purchased online or you can make your own using traffic cones and PVC piping. Choose cones tall enough to accommodate a hole at the height of your dog's elbow or stifle. These higher bars will cause your dog to flex his joints more to step over cleanly, and you can adjust how far apart they are to encourage increased extension. Walking up hills or stairs also promotes extension.

### Cool-Down, Too

When the fun is over, don't let your panting dog flop down on the ground right away. Dr. Frye recommends walking for 10 minutes to give the cardiovascular system time to cool down. This extra bit of low-intensity activity following high-intensity exercise continues to promote circulation, which assists with the removal of lactic acid from the tired muscles. The cool-down will help your dog bounce back more quickly and prevent soreness. ■

## Educate the Owner

*The goal is positive behavior modification*

**A**ggressive behavior in dogs is a serious problem. Most dog owners who turn a dog over to rescue report that the reason is the dog's bad behavior, so researchers at the University of Bristol explored the factors that influence how owners manage aggressive behavior in their dogs. The study found that clinical animal behaviorists should focus on helping dog owners feel confident in the effectiveness of the positive behavior modification techniques that they recommend and in their ability to use them successfully on their dog.

The aim of the study was to find out what influences an owner's decision to use outdated punishment-based methods and what the barrier- and drivers were to using positive reinforcement-based solutions. In particular, researchers wanted to explore whether theoretical models and psychological concepts used in other contexts could help them understand.

Current evidence suggests that positive reinforcement-based behavior modification techniques are both humane and effective in the treatment of aggressive behavior in dogs and that the use of punishment-based techniques are detrimental to the welfare of the dog and can lead to an increase in aggression. However, many dog owners continue to use punishment-based techniques.

The research found owners' perceptions of how effective the behavior-modification techniques are and how effectively they feel they can apply them are key factors predicting their current and future use.

Although a lot of attention has been focused on the consequences to the dog of using negative training, this is the first time research has systematically examined the factors influencing an owner's choice of training technique, as well as the impact of this behavior upon the owners of these dogs.

Dr. Emily Blackwell, Director of Companion Animal Population Health



*If you use positive reinforcement to reward the behaviors you want, you will achieve a higher rate of success, but many dog owners do not understand the concept.*

at Bristol, says: "Our findings highlight the need for behaviorists to offer practical support to owners, to demonstrate the effectiveness of reward-based training and to provide them with an opportunity to practice under expert guidance, so that they feel confident in their ability to use the techniques before attempting to apply them independently."

Dr. Emma Williams, VC Fellow in Digital Innovation and Wellbeing in the School of Psychological Science, added: "We believe this is the first time that psychological theories exploring how people respond to threatening situations, such as Protection Motivation Theory, have been applied to understand people's interactions with their pets." (In 1975, Dr. R.W. Rogers developed the Protection Motivation Theory, which looked at how people cope with fear or a threat.)

The study identified the potential for extreme negative emotional responses and feelings of failure experienced by owners when their dog reacts badly toward another person or dog. Further research is needed to explore the influence of different psychological factors on an owner's decision to use positive reinforcement techniques to manage their dog's aggressive behavior. ■

*Williams, EJ, et al. Managing the Risk of Aggressive Dog Behavior: Investigating the Influence of Owner Threat and Efficacy Perceptions. Risk Analysis, 2019; DOI: 10.1111/risa.13336. Science Daily.*



# Helping Abused Dog Adjust

*German Shepherd needs time to learn to trust again*

**Q** I am 73 years young and bought my first purebred German Shepherd when I was 15 with money I worked for and saved. I raised puppies for a few years and kept indoor Shepherds all my life.

For the last 30 years, I began rescuing and adopting them as I became more aware of the great need. I always have two to three in the house. They are my best friends and lifeline in life. I'm telling you all this for background.

About nine weeks ago, I rescued a German Shepherd who is 8 years and had been greatly abused. I paid the man \$50 for the dog, as an alternative to reporting him. I also told him I would check on him and severe consequence would befall if he has another.

I have the dog on a large dosage of sertraline for anxiety during this time period. We have made great progress; he has changed a lot, and he knows he is loved and safe now. He is now a different dog, but I fear he still has a long way to go if he is ever to completely get over the life he was living.

I read your informative column, Dr. Houpt, and I wanted to see what your view is of his situation.

**A** I am sure you have been a blessing to the many German Shepherds you have taken into your home.

## 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](mailto:dogwatcheditor@cornell.edu) or send by regular mail to DogWatch, 535 Connecticut Ave., Norwalk, CT 06854-1713.



### Coming Up ...

- ▶ Safely grinding nails and choosing the tool
- ▶ Maintaining orthopedic health
- ▶ Controlling flatulence
- ▶ The ABCs of choosing a dog trainer



*A dog who has been abused will need time to learn to trust people again.*

They are not an easy breed to manage so you are particularly needed.

You recently adopted a dog you rescued from an abusive situation. From the tenor of your letter I think you mean physically abused.

There are many types of abuse: dogs can be hit (non-accidental injury) starved, maltreated, neglected, and treated cruelly. They can be kept in dangerous or unsanitary conditions with inadequate shelter and an excessive number of animals.

In my experience, many of these cases began when the owner decided to "help" dogs and took on more animals than he or she could afford to feed, much less provide with adequate veterinary care. In extreme cases, the person becomes a hoarder and goes from having a few well-fed dogs with comfortable beds and access to an outdoor enclosure to having 20 dogs in a filthy place with feces everywhere and with no access to a clean place to lie and probably inadequate food. There may be dead dogs in the house.

Other cases of abuse can be confinement in small and/or dark places. The dog may have been tethered—sometimes from puppyhood so that the collar that fit when the dog was 3 months old is now embedded in his skin and his entire world is within the radius of a six-foot rope.

Abused dogs may have been

malnourished; I remember a case in which the dogs were fed nothing but bread. Frequently, the dogs have little or no veterinary care.

In the case of your dog, the abuse was physical. The term is non-accidental injury. Dogs can be burned or struck. A dog with broken ribs has probably been abused because that injury does not occur in normal dog life, even a rough and tumble one.

Your question was what else you can do to help the abused shepherd return to normal life. Treating the dog with sertraline was a good first step. Sertraline is a serotonin reuptake inhibitor like fluoxetine (Prozac). It helps the nerves in the brain be exposed to the calming effects of the neurotransmitter serotonin longer. It also causes the nerves to grow more dendrites so that the dog can learn new things. In this case, you want him to learn that people can be trusted.

We usually recommend that if a dog is doing well on a psychoactive medication, he should remain on the medication for six months. Then you could begin to reduce the dose to determine whether the dog remains relaxed and calm or whether he still needs biochemical help.

In addition to the psychoactive medication, I would recommend exercises to build trust. All of his training should be positive—no prong collars or electronic ones, as I'm sure you would never use.

You have probably already taught him to sit. Now you can ask him to sit for anything he wants. Sit, and you will pet him. Sit, and you will take him outside. Sit, and he gets a delicious treat. What he will learn is that humans are predictable. If he does a simple task, you will reward him for it.

Keep up your good work! As you suspect, this dog will need time to adjust, but your experience and dedication will get him through. He's a lucky dog that you found him. ■

## © HAPPENING NOW...

**One More Step to Go**—The Preventing Animal Cruelty and Torture Act (PACT Act) bill, which many believed was dead, has now passed both the House and the Senate unanimously. All it needs is a signature from President Trump to make it a law. If signed, the bill will carry punishments of fines and up to seven years in prison for any act of intentional, deliberate cruelty to an animal. ■