

Your complete guide to natural dog care and training

Whole Dog Journal™



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On page 11. Cold is Snow Problem – These warm coats keep your pup from losing even a step in foul weather.



On page 20. Don't Howl About It – Train your dog like a dog.





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Don't Hire Blindly

It's easier than ever to find a pet sitter or dog walker, but that doesn't mean you should hire just anyone.

Have you heard the term “gig economy”? It refers to the fact that more than a third of workers today (36 percent) are employed in part-time, short-term, and/or freelance jobs. Believe it or not, the rise of workers in this gig economy has had a mostly positive effect on our dogs (and has presented them with one specific hazard – more about that in a moment).

How is the gig economy good for our dogs? Well, one reason is that more of us than ever are working from home, where we can be more responsive to our dogs' needs for walks and outdoor breaks. Another is that there are more people than ever making at least some of their income by offering their services as respite workers for dog owners – you know, dog walkers and pet sitters. It has never been easier to find someone who can come to your home and feed a midday meal to your dog, take him outside to potty, administer medicine, or even transport him to an off-leash trail for a hike! There are even a number of tech companies (such as Rover.com, Care.com, and PetSitters.org) dedicated to helping dog owners connect with people who provide these services.

How might this be a bad thing? With more people than ever providing these valuable services, there are more *unqualified* people than ever doing these jobs. Some of the people who market themselves as experienced dog handlers may have experience only with small dogs or well-behaved dogs and may be completely unprepared for managing your dog-reactive Giant Schnauzer or for the quick, cat-killing move that an athletic hunting breed can make, even on leash! Some of these people are completely inexperienced, dangerously untrained, and ignorant of effective, dog-friendly handling techniques.

In the San Francisco Bay area, part-time pet sitters and dog walkers are now so numerous that they can be seen on literally every block. It's there that I have witnessed dog walkers doing things that horrified me – such as talking on their cell phones while walking half a dozen shut-down-looking dogs, each equipped with a shock collar. I recently saw a “professional” dog walker park 100 feet from the gate to a dog park, open the back of her truck, allowing 10 or more dogs to jump out of the truck and run, loose, to the dog park gate (where they were greeted by a wound-up mob of other dogs; the ensuing fracas was broken up with yells and squirt bottles by several dog walkers). A dog trainer friend told me about a dog walker she ran into recently who, over her protests, picked up and *threw* a Chihuahua-mix who had initiated an (inappropriate but ultimately harmless) scuffle with her dog. “He has to *learn!*” the dog walker said angrily. I'd say that it's the dog's *owner* who needs to learn – how to screen his dog-care providers. My point? Please be discerning when hiring, ask for references, and pay attention to how your dog feels about the people you hire. **NK**





Fighting Through The Fence

Even dogs who do not display aggression in any other setting can develop frightening behaviors when behind a barrier.

Fortunately, fence aggression can be managed and modified.

Fence aggression – barking, lunging, and fence-fighting – is an all-too-common canine behavior. It can also be a very difficult behavior to live with. A dog who is left for long periods of time (especially) in an enclosed yard can easily become frustrated and aroused by dogs being walked past her space and her inability to interact with those dogs. That frustration often turns into aggression, and the aggression can become very serious. Dogs can even be grievously injured or even killed if they are able to grab another dog (or part of a dog) through a fence.

It's no fun for the leashed dogs either, as they make their rounds around the neighborhood with their humans and are repeatedly charged at by barking, snarling dogs.

By the way, this phenomenon isn't limited to physical fences. The underground shock fence – a most unfortunate invention for a long list of reasons – can also trigger similar responses, often exacerbated by the “fenced” dog's additional pain association with the non-visible barrier.

I sympathize with families who live in suburban and urban environments where dogs being walked on leash on the sidewalk is a very regular occurrence – perhaps many times a day – triggering the resulting barrier aggression. It can be even more of a challenge when neighbors have common fencelines and the dogs on both sides of the fence are reacting to passersby and to each other. I have a number of clients whose dogs' overall behavioral challenges are significantly exacerbated by the fact that they must constantly manage interactions through the fence with next-door dogs.

WHY FENCE AGGRESSION?

In decades past, before we as a culture became more responsible about keeping our dogs safe at home, a fenced yard was a relatively rare phenomenon. The family dog was often allowed to roam the neighborhood and interact freely with other neighborhood dogs and humans. In general, they were better socialized and fence aggression was uncommon. Of course, dogs also routinely got hit by cars, shot,

Dogs who are fighting through a fence often sound even more violent than dogs who are fighting without a barrier between them. The pent-up frustration often results in the dogs redirecting their aggression from the triggers on the other side of the fence to their own companions.



poisoned, and just plain disappeared. I am certainly not advocating going back to the days of free-roaming dogs just to avoid fence-fighting! But we do need to look for better ways to keep dogs contained in order to avoid concomitant unwanted behaviors.

The fenced dog often really just wants to investigate, explore, and approach and meet passers-by. When thwarted, she becomes frustrated. Over time this frustration becomes a classically conditioned response, and the mere sight of another dog or other stimulus beyond the fence causes frustration, arousal, and aggression.

To compound the problem, the fenced dog is also negatively reinforced when she barks in an aroused frenzy and the stimulus goes away. She has come to perceive passing dogs and humans as intruders – “bad things” – and in her mind, the aroused barking makes the “bad things” go away; this is a textbook example of negative reinforcement. (Negative means something goes away – as in “subtraction” – and reinforcement means the behavior increases.) Our dogs naturally repeat behaviors that make “bad things” go away.

To make things worse, it’s not necessarily just other dogs. Our fenced dog can develop the same arousal and aggression toward any stimulus that routinely passes – a walker, jogger,

skateboard, bicycle, motorcycle, car, or child. These can all become triggers for your dog’s fence aggression.

Barrier aggression can present behavioral challenges that go far beyond the backyard. While some dogs who have developed fence aggression can behave calmly and appropriately when presented with the stimulus in an unfenced environment, many others will generalize the frustration-association and continue to aggress even when there’s no fence. This doesn’t bode well for future encounters with other dogs, joggers, vehicles, and children.

MANAGEMENT: THE BEST DEFENSE IS A GOOD FENCE

Of course, it’s always better to prevent unwanted behaviors than it is to have to modify them later. A solid privacy fence and good management (not leaving your dog in the fenced yard unattended) can go a long way toward preventing fence aggression.

If it’s too late to prevent fence-fighting for your dog, it’s still not too late to put prevention measures in place to avoid ongoing reinforcement for the behavior. Management is critically important for successful modification, so your dog can’t continue to practice and be reinforced for the unwanted behavior.

If you can’t install a privacy fence,

perhaps you can cover your existing fence with something (such as fiberglass-reinforced plastic [FRP] panels) – ideally on the outside of the fence so your dog can’t chew at it. Alternatively, you could attach tarps to the fence to create a visual barrier – although they aren’t very aesthetically pleasing.

If you share a fenceline with a neighbor dog, perhaps you can put up a second parallel fence several feet away from the existing one to create a “no-dog’s land” airlock and thereby prevent through-the-fence contact.

Other management options might include letting your dog into the backyard instead of the front (if you can) to prevent arousal at various passersby and agreeing on a schedule with your neighbor so your respective dogs are never in their backyards at the same time. If your fence-aroused dog has generalized her behavior to running back and forth at windows when she’s indoors, you can cover the bottom half of the windows and/or use gates to block access to rooms with windows.

CHANGING BEHAVIOR

With management options solidly in place, you can begin to work to modify your dog’s fence aggression. The goal is to give her a new association with any of the triggers that she has reacted to by feeding high-value treats when she sees another dog or any of the other various stimuli that have set her off.

To begin, choose a time when your neighbors are likely to be walking their dogs (or joggers, children, bicycles, etc. are likely to be passing by) and hang out in your yard with your dog on leash (so she can’t run the fenceline). You should be equipped with an ample supply of yummy treats. Chicken (canned, boiled, or baked) is my favorite for

Beware of Redirected Aggression!

Redirected aggression is a common and dangerous side-effect of barrier aggression. Say your two normally compatible dogs are running the fence side by side in their yard in a frustrated/arousal response to another dog passing by. Suddenly a fierce fight breaks out between the two yard dogs. What just happened?

Their high level of arousal has just caused them to redirect their aggression to each other. The same thing can happen to you if you try to physically interrupt your dog’s high-arousal fence-running behavior – she can redirect her aggression to you, inflicting serious bites.

It is much safer to interrupt your dog’s barrier aggression with a loud noise (bang pans together, set off a hand-held air horn, etc.) or by tossing a large soft object into her path, rather than trying to touch or grab her. Be careful!





If your dog won't take an especially tasty treat, you are too close to the stressful stimulus for effective counter-conditioning work. Move yourself and your dog farther away, until he will readily eat the offered treats.

most dogs; it's healthful, low-calorie, easy on stomachs, and most dogs love it.

As soon as your dog notices the presence of one of the offending triggers, feed her bits of chicken. Pause, let her notice again, and feed again. Continue this notice-feed protocol until the stimulus is gone. Then wait for the next one to appear, and repeat.

This process is called counter-conditioning and desensitization (CC&D). When you give your dog a new "chicken association" with her triggers, her emotional response changes from "frustrated and aroused" to happy "Yay, chicken!" As a result, her aggressive behavior changes to a cheerful look to you for the next chicken delivery. This is called a *conditioned emotional response* (CER).

The key to successful CC&D is controlling the intensity of the stimulus. Your goal is to keep your dog "below threshold" – aware of the stressful trigger, but not upset by it – as you work to create the new association. You may need to start your sessions a distance of 10, 20, 30 feet or more from the actual fence in order to succeed. You want her to notice the stimulus but not bark or lunge at it. Also, your dog should be happy to eat the treats you offer; if she refuses them, she is too stressed by the proximity of the stimulus and you need to move farther away from the fence and try again.

Using CAT For That

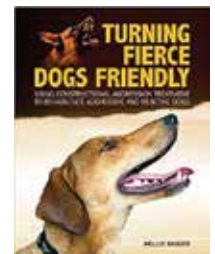
CAT stands for "Constructional Aggression Treatment," and it uses negative reinforcement to modify aggression. Your fence-fighting dog has learned that barking and lunging makes the bad dog (or other stimulus) go away. She probably doesn't realize the other dog would have gone away anyway! Using the CAT procedure, you could teach your fence-fighting dog that *calm behavior* makes the other dog go away.

Start with a helper holding a leashed neutral dog (one who can be counted on to stay calm and cool, no matter what the other dog does). Position them at a sub-threshold distance – far enough away that your dog notices but does not yet react. Position yourself in your yard with your dog, and be equipped with an ample supply of high-value treats.

Have your neutral-dog team move toward your fenced dog. (Initially you are in the yard with your dog.) Instruct your helper to watch your dog closely, and stop and stand still as soon as your dog alerts on the neutral dog – but *before* there is any barking, etc. As soon as your dog relaxes even the teeniest bit, your helper should turn and walk away with the neutral dog. You just showed your dog that *relaxing* makes the other dog go away.

Repeat these negative reinforcement approaches and departures at the original spot until your dog no longer alerts, then have your helper take one step closer and repeat the process there. In a successful CAT procedure, your dog becomes so relaxed – because relaxation keeps getting reinforced – that she eventually no longer feels the need to "make" the leashed dog go away.

For more information on the CAT procedure, see the recently released book by CAT creator Kellie Snider, *Turning Fierce Dogs Friendly: Using Constructional Aggression Treatment to Rehabilitate Aggressive and Reactive Dogs* (available through wholedogjournal.com). Please note that successful implementation of the CAT procedure usually requires the guidance of an experienced canine behavior CAT professional.



When your dog consistently offers "Where's my chicken?" looks, you are ready to move a little closer and continue the CC&D. Continue your slow advance until she can remain calm in the presence of her triggers even when you are right at the fence.

If you're lucky, your dog may generalize her new happy associations beyond the fence; once you get to that point, you're home free! If not, you will also need to do CC&D sessions in other locations. The same instructions apply: Work below threshold, obtain consistent CERs, and gradually increase intensity of stimulus until she can remain relaxed, calm, and appropriate in normal proximity to any of the things that have caused her to be fence-aggressive in the past.

KEEP MANAGING

Finally, you will need to continue to monitor and manage your dog's activities in her yard. While the CC&D can successfully help your dog create new associations and more agreeable behaviors, the old neuron pathways for aggression are still there in her brain. Unmanaged exposure to her triggers could easily cause the old behaviors to resurface. You don't want that to happen after all your hard work! 🐾

Author Pat Miller, CBCC-KA, CPDT-KA, is WDJ's Training Editor. She lives in Fairplay, Maryland, site of her Peaceable Paws training center. Miller's newest book is Beware of the Dog: Positive Solutions for Aggressive Behavior in Dogs. See page 24 for contact and book purchasing details.



Lyme Disease in Dogs

What every dog owner should know about preventing, diagnosing, and treating this tricky tick-borne disease.

Most people think of Lyme disease being caused by ticks – and that’s partly true. The organism that actually causes Lyme disease is a spirochete bacteria called *Borrelia burgdorferi*; ticks just pick up, carry around, and transmit the bacteria into the creatures they feed upon. The best way to prevent your dog from getting Lyme disease, then, is to prevent his exposure to ticks. Sound easy? Anyone whose dog has ever had Lyme disease can tell you that it ain’t necessarily so.

Lyme disease is named for Lyme, Connecticut, the town where it was first discovered. While most common in the northeastern United States, Lyme exposure has been recorded in all 48 of the continental United States. Lyme is most common in the northeast, upper Midwest, and parts of California, but can be present anywhere that *Ixodes* ticks are found – which is just about everywhere. The Companion Animal Parasite Council’s website has an interactive map that shows how many Lyme disease tests were performed and how many animals tested positive in each state (see capc.org/maps).

TRANSMISSION

Dogs get Lyme disease after being bitten by an infected tick: *Ixodes scapularis* in the northeast and upper Midwest (commonly called a deer tick), or *Ixodes pacificus* in the west (deer tick or black-legged tick). These ticks have a two-year life cycle that takes them through four life stages (egg, larvae, nymph, adult.)

Ticks do not hatch carrying *B. burgdorferi* spirochetes. Instead, they pick up the bacteria from feeding on infected hosts, often mice.

When a tick feeds on an infected animal, spirochetes enter the tick along with the animal’s blood. The spirochetes then remain inside the tick’s midgut until the tick feeds again, at which point the spirochetes move to the tick’s salivary glands. They get “spit out” by the tick into the dog’s body at the end of the tick’s feeding session, entering the new host’s bloodstream.

Because of the necessary migration through the tick, transmission is not instantaneous – but it may be faster than what has been previously reported, even by reliable sources like the Centers for Disease Control and Prevention. According to lymedisease.org, some studies have shown that the Lyme-causing bacteria was transferred from a tick to its host in less than 24 hours. Once transmitted, *B. burgdorferi* infects the dog’s joint capsules, muscles, and lymph nodes. It takes several months for an infection to cause clinical signs.

However, just because a dog is exposed does not mean that he will go on to develop clinical signs of Lyme disease. According to the Cornell University College of Veterinary Medicine, only five to 10 percent of dogs infected with *B. burgdorferi* develop clinical signs of Lyme disease.

SYMPTOMS

There are three “states” of Lyme disease in dogs: acute, subacute, and chronic. Symptoms generally do not appear until after a two- to five-month incubation period, and can take even longer. Affected dogs may first shows signs of any of the three states, and may progress to others depending on the severity of infection, the dog’s immune system, and treatment.

Symptoms of **acute** Lyme disease include fever, lethargy/reluctance to move, depression, fatigue, anorexia (loss of appetite), pain, swollen lymph nodes, acute arthritis in one or more joints, swollen joints that may be warm to the touch, and a “shifting” lameness from one leg to another.

Symptoms of **subacute** Lyme disease include persistent lameness, ongoing inflammatory changes in the joints, and arthritis (either transient or persistent).

The most prevalent symptoms of Lyme disease in dogs is a “shifting” lameness that moves from leg to leg, fatigue, fever, and lethargy.



Symptoms of **chronic** Lyme disease include cardiac signs such as arrhythmias, neurologic signs, arthritis, and kidney damage.

In rare cases, kidney damage can escalate to Lyme nephritis, which is usually fatal. Signs of Lyme nephritis include anorexia, vomiting, weight loss, muscle wasting, lethargy, bad breath, azotemia (elevated creatinine and BUN), and edema (excess fluid). Golden and Labrador Retrievers seem to be predisposed to developing Lyme nephritis, so extra care should be taken with dogs of or mixed with these breeds if they contract Lyme disease.

The symptoms of Lyme disease can also be caused by a wide variety of other conditions, ranging from ehrlichiosis (a different tick-borne disease) to orthopedic conditions such as a torn cruciate ligament or even cancer. This makes diagnosis more challenging (and expensive), as the veterinarian must rule out a variety of conditions.

TREATMENT

According to Justine A. Lee, DVM, DACVECC, DABT, of St. Paul, Minnesota, the decision to treat “should be based on the presence of clinical signs, breeds at risk for developing life-threatening chronic effects (e.g., breeds predisposed to Lyme nephritis), and presence of proteinuria or microalbuminuria.” Dogs with clinical signs should be treated to provide relief, and breeds at higher risk of developing Lyme nephritis should be treated as a preventative measure.

Proteinuria (the presence of protein in the urine) and microalbuminuria (an increase in the amount of albumin in the urine) are signs of kidney damage, and so suggest the potential for Lyme nephritis. Proteinuria is considered significant only in the absence of a urinary tract infection (UTI), so a UTI must be ruled out before proceeding.

Microalbuminuria can't be measured with a standard urinalysis; it requires special testing, which is unnecessary if proteinuria is seen. It can also be caused by other types of infection or inflammation.

Doxycycline is the antibiotic of

choice for most Lyme disease cases. Other options are amoxicillin, minocycline, and Convenia (cefovecin sodium). The dog's clinical symptoms should resolve rapidly after starting treatment, but the full course of medication must be given to ensure that the infection has been completely cleared and all spirochetes killed.

Most veterinarians currently use a four-to-six week treatment course, but some prefer a longer treatment time of up to eight weeks. Higher doses of doxycycline than usual, 10 mg/kg twice a day, may be more effective. If the dog does not improve within two or three days, screening needs to be done for other diseases or conditions.

Don't be surprised if your veterinarian does not prescribe a pain reliever for your limping dog suspected of having Lyme; if she truly has Lyme, the antibiotics alone will resolve her lameness quickly, and if she doesn't, giving corticosteroids or NSAIDs could give a false sense of security while the true underlying problem goes undiagnosed.

Dogs with chronic Lyme disease should have their urine checked for proteinuria and microalbuminuria every three to six months. If proteinuria persists after a four- to six-week course of antibiotics, further renal-supportive measures will need to be taken and your veterinarian may recommend another course of antibiotics and/or a kidney biopsy to rule out immune-mediated glomerulonephritis.

Before doing a biopsy, discuss with your vet how likely the results are to change treatment and prognosis. Kidney biopsies can damage the kidneys and rarely impact treatment or prognosis. Glomerulonephritis can also be diagnosed via urine protein:creatinine (UPC) ratio.

For dogs with Lyme nephritis, treatment is primarily supportive care and will likely include fluid therapy along with dietary management and medications to support the kidneys and gastrointestinal tract.

Treatment is generally not recommended for dogs who have no clinical signs, have no signs of kidney damage, and are not among the breeds at

greater risk developing Lyme nephritis. This is because the majority of dogs exposed to Lyme disease do not go on to develop it, and antibiotic therapy comes with its own risks and complications, including gastrointestinal upset, changes to the microbiome, and increased liver enzymes. Overuse of antibiotics also contributes to antibiotic resistance.

If your dog falls into this category and you have concerns, make an appointment to discuss this with your veterinarian to determine the best plan for your dog and your situation. Even if you choose not to treat your dog at this point in time, you and your vet can set up a plan for monitoring your dog's blood and urine values to catch any developing complications early. An annual urinalysis should already be part of your dog's routine vet care.

TICK PREVENTION

As they say, prevention is the best medicine. There is no need to worry about whether or not you should treat if your dog is never exposed to Lyme disease in the first place. Tick prevention is the cornerstone of Lyme prevention.

Tick preventives are available in a wide range of formulations, from topicals to collars to oral medications. Most topicals need to be applied monthly, and oral medications may need to be given once a month or every three months. Collars have varying efficacy lifespans, and you need to be sure that the collar is marketed for ticks and not just fleas. Ticks have shown resistance to certain medications in regional areas, so consult with your veterinarian about which products work well in your area. Ticks can be active even in cold weather, so year-round use of preventives is highly recommended.

Environmental management is also important. Ticks dry out in direct sunlight, so keeping your lawn mowed short and clear of leaf litter will help. Keep your dog out of wooded areas or fields of tall grass, especially in the spring and fall when ticks are most active. Fence your gardens to discourage deer and rabbits from bringing ticks onto your property, and control any

rodent infestations in your house and outbuildings. Guinea hens, chickens, and to some extent ducks will all eat ticks, so keeping fowl and allowing them to graze your property is an all-natural way to remove ticks.

You can also treat your lawn with parasiticides, though many of us are reluctant to do this, even though ticks *can* be present in lawns. My own Corgi came up with three in his ear while being walked solely on my front lawn

and the college campus next door.

More important than any topical tick prevention is a full physical inspection. After every romp in the woods or in another high-risk area, checking your dog thoroughly for ticks. A comb can be useful for parting the coat on longhaired dogs, and flea combs can pick up ticks. Be sure to check your dog's ears and groin. Keep in mind that nymphs, also called seed ticks, are the size of poppy seeds and difficult to see

but can still transmit Lyme and other tick diseases. Nymphs feed in late spring and early summer before molting into adult ticks in the fall.

If you find any ticks, remove them carefully, and dispose of them in a sealed container. (See "Seriously, Tick: Off!" WDJ March 2018 for more details on tick removal.) 🐾

Kate Eldredge is a licensed veterinary technician from Plattsburgh, New York.

Should You Vaccinate for Lyme?

There are several vaccines available for Lyme, each of which work slightly differently. There are different strains of *B. burgdorferi* spirochetes in different environments, and each produces different "outer surface proteins" (Osp). Lyme vaccines are made with different combinations of outer surface proteins, and work differently based on what proteins they include.

OspA is produced by spirochetes in a nutrient-poor environment, such as inside a tick that hasn't fed, and is consistent across *B. burgdorferi* strains. If your dog has received a vaccine based on OspA, the OspA antibodies that are circulating in her bloodstream will enter a tick when it bites and attack the spirochetes in the tick's midgut. That means the spirochete is targeted before it even enters your dog, and because of this, just about every Lyme vaccine includes it. The downside is that your dog must have a high level of circulating antibodies in order for the vaccine to be effective. Antibody production varies from dog to dog, and a series of titers would be necessary to know how your dog's immune system responds to the vaccine and how long immunity remains. Because the dog's immune system is never directly challenged by the spirochete, there is also no potential for immune memory.

OspC is produced in a nutrient-rich environment, such as a tick that is actively feeding and filling with blood, or inside your dog. If your dog has received a vaccine based on OspC, the OspC antibodies circulating in her bloodstream will attack the spirochetes when they enter the dog's bloodstream and adapt to the nutrient-rich environment. The plus to OspC vaccines is that there is much more potential for immune memory, because your dog's immune system will encounter the actual antigen. The downside is that the spirochete will gain access to the dog,

and if the dog is bitten by a tick carrying a *different* strain of *B. burgdorferi* than what she was vaccinated against, the immune system won't recognize the spirochete as a threat.

Some vaccines combine both OspA and OspC for dual coverage. Vanguard has developed a vaccine that combines chunks of seven different OspC proteins along with OspA.

The other type of vaccine is a bacterin. A Lyme bacterin consists of *B. burgdorferi* spirochetes that have been killed or otherwise rendered inactive. Depending on the culture in which the bacteria were grown, they may have OspC proteins, but are more likely to have OspA.

Vaccinated dogs can still become infected with *B. burgdorferi*. This can be due to exposure to a different strain than what was included in the vaccine, or due to insufficient antibody production/levels in the individual dog.

How often should you vaccinate? There isn't consensus on this in the veterinary community. There is some support for six-month boosters, but at this point the only safety studies done have been for the standard two-dose initiation followed by annual boosters. Tracking titers after vaccination is an option to watch how each dog's antibody levels change over time, but this is expensive.

Vaccination is recommended for healthy dogs at an increased risk for exposure to ticks carrying Lyme, such as those living in Lyme-endemic areas or those who spend a lot of time in the woods. Vaccination for dogs who are ill or already proteinuric is not recommended.

While vaccination can be an effective part of your dog's Lyme prevention plan, it does not take the place of tick preventives and environmental management. Discuss with your veterinarian whether or not a Lyme vaccine might be useful for your dog.

LYME VACCINES ON THE MARKET TODAY

VACCINE	MAKER	TYPE
Duramune Lyme	Elanco	Bacterin – has both OspA and one OspC
LymeVax	Zoetis	Bacterin – has both OspA and one OspC
Nobivac Lyme	Merck	Bacterin – has both OspA and one OspC
Recombitek Lyme	Merial	OspA
Vanguard crLyme	Zoetis	OspA and at least 7 types of OspC

Testing and Diagnosis

When a dog is exposed to *B. burgdorferi*, his immune system will make antibodies in response to the outer surface proteins on the spirochete. Lyme tests generally look for antibodies to these outer surface proteins. It takes at least three to four weeks for antibodies to develop after a dog has been exposed; testing before that time may produce false negative results. Testing positive for Lyme does not mean that the dog actually has or will develop clinical signs of Lyme disease – it just means that the dog has been exposed.

The SNAP 4DX Plus test offered by IDEXX evaluates whether or not a dog has antibodies to the C6 peptide, a chain of amino acids present in the spirochete. This test is appropriate to answer the question, “Has my dog been exposed to *B. burgdorferi*?” with a yes or no answer. To run the test, your veterinarian will need a few drops of your dog’s blood. It takes only eight minutes to run, so you can know your dog’s results before leaving the clinic. This test also checks for two other tick-borne diseases (ehrlichiosis and anaplasmosis), and heartworm. Results should not be affected by Lyme vaccination.



Two tests offered by Abaxis – VetScan Canine Lyme Rapid Test and VetScan Flex4 Rapid Test (which also tests for ehrlichia, anaplasmosis, and heartworm) – also evaluate whether or not the dog has been exposed to Lyme. There is potential for this test to give a false positive if the dog has received a Lyme vaccine that includes the OspC protein.

Follow-up testing to *quantitatively* measure antibody levels gives more information about a dog’s Lyme status, but requires interpretation. There is no standardized level of antibodies that says that a dog is or is not currently infected – different dogs will produce different numbers of antibodies. Tracking antibody level over time, however, can tell you that an infection is clearing or has cleared (antibody level going down due to lack of bacteria present to target) or that reinfection has occurred (antibody level goes down, then jumps back up due to new exposure). Some dogs may have antibodies present in their blood years after the infection has cleared due to immune system memory.

One quantitative test is the Lyme Quant C6 Test offered by IDEXX, which gives an antibody level for the C6 peptide, as well as a general reference range suggesting whether to treat or not (an antibody level great than 30U/ml is considered worth treating). C6 antibodies are produced only by exposure to *B. burgdorferi*, not a Lyme vaccine, avoiding any confusion with Lyme-vaccinated patients.

Another quantitative test is Cornell University’s Lyme Multiplex Assay, which checks for three different proteins: OspA, OspC, and OspF. OspA antibody levels indicate that a dog has been vaccinated for Lyme, OspC indicates early infection and can be detected as early as three weeks after infection, and OspF indicates chronic infection. It is possible to get a false positive on this test if your dog has been vaccinated with a vaccine that included OspC. Even without treatment, OspC titers will go down after three to five months, but OspF titers (which show up by six- to eight weeks post-exposure) will remain increased if the dog is not treated. Always include the date and type of any Lyme disease vaccine that has been administered to your dog on the submission paperwork that accompanies your dog’s Lyme test. This will allow the lab to give a more accurate report, factoring in any potential false positives due to vaccination.

None of these tests can indicate whether a dog will or will not become ill. Diagnosis of Lyme disease requires a full exam by your veterinarian and consideration of any clinical signs, including kidney and urine values. And due to the nonspecific nature of Lyme symptoms, it is possible that a dog’s Lyme-positive status is incidental and not the actual cause of illness.

So should you test for Lyme if your dog is healthy? That is a choice to be made between you and your veterinarian. If your clinic offers the SNAP 4DX or VetScan Flex 4 tests, you will probably have that done yearly anyway to check your dog for heartworm infection, which is very dangerous to dogs, as well as the other tick-borne diseases. A positive Lyme result can remind you to drop off that annual urine sample for evaluation to look for protein in the urine, especially if you have a breed or mix at higher risk of developing Lyme nephritis (or if your dog already has kidney issues).

If your dog is showing signs of Lyme, testing can help to determine whether or not Lyme is the culprit. However, at this point in time, ***the only way to be sure that a dog is sick because of Lyme disease is to treat and see if the dog improves quickly.*** Quantitative tests such as the Lyme Quant C6 can be repeated over time to track changes in the dog’s antibody levels in response to treatment.

Keep in mind that once your dog has been exposed to Lyme, he or she will continue to have antibodies even after treatment. This is a good thing, because it shows that your dog’s immune system remembers the invader. So don’t panic if your dog tests positive on a qualitative test after treatment. Repeating one of the quantitative tests, such as the Lyme Quant C6 or Lyme Multiplex Assay, can give a more accurate idea of whether or not your dog has been re-infected – a new spike in OspC antibodies, for instance, indicates that the dog has been exposed to Lyme again.

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PRODUCT
REVIEW

Cold Comfort

Do you live in a very cold climate? Do you walk your dog in snow, sleet, freezing rain, or sub-zero temperatures? Check out these super warm, durable, comfortable winter dog coats.

Selecting a winter coat for your dog can be as overwhelming as deciding what food to feed him and what type of collar or harness to use. There are so many styles, cuts, colors, fabrics, and functions!

This year, when WDJ editor Nancy Kerns – a California native – needed a hand to sort through the winter coat products, I didn’t hesitate to say: “Leave it with me, I’ve got this!” As a Canadian living in the province of Quebec, I’m all too familiar with the criteria that a coat must meet to satisfy the needs of dogs living in a true northern climate.

OUR SELECTION CRITERIA

We asked dozens of dog-owner friends in northern climes for their recommendations and then chose the 10 most frequently cited “best” coats on the market to test.

Every season, northern-dwelling dog owners are faced with a mish-mash of winter weather: seriously sub-zero temperatures; wet, crusty, or powdery snow; ice; and even freezing rain. Regardless, we’re out there with our dogs, whether for a quick potty break or an afternoon of outdoor fun! A good coat will be designed to handle *all* the various winter elements. This versatility is specifically what I looked for when testing coats for this review.

To accomplish this, I tested the coats for warmth, water resistance, and the ability to put them on and take them off a dog easily. I also looked for comfort – the fit and fabric that best allowed ease of movement for active dogs.

Most of the products I reviewed are pricey. Admittedly, I wasn’t looking for a bargain. If you’re out with your dog in a seriously cold winter climate, you need serious gear.

If you live in a seriously cold climate, your dog would undoubtedly appreciate one of the warm winter coats we have reviewed. We evaluated the products for warmth, water resistance, ease of “dressing” the dog, durability, and comfort.



One of our Top-Rated Coats:
Hurtta’s Summit Parka

A final note before we describe the coats we tested. We selected and tested 10 coats, but one (RC Pet’s Skyline Puffy Vest) was discontinued between the time of our tests and publication of this issue, so only nine are included in this review.

OUR FOUR-PAW FAVORITES

All of the coats we selected to review came well-recommended by friends, so it stands to reason that all of the products in this review will receive favorable ratings. (Believe us, there are *countless* crummy coats out there; we couldn’t begin to list them all.) But of course, we developed our own favorites among the products we tested.

Top Pick: Hurtta Extreme Warmer

Let’s start with our favorite. The interior of the Extreme Warmer coat is lined with reflective material designed to conserve body heat, allowing for a design that’s lightweight and not at all bulky. We love this stuff. (In fact, our extreme winter coat is lined with the same material, and we can comfortably wear just a t-shirt beneath it even in sub-zero temperatures.)

There is a soft, lightweight neck warmer, also lined with reflective material and fully adjustable. The coat is easy to put on and take off, but must be fitted over the dog’s head. We noted that the neck warmer is like a long,

loose turtleneck, making a good over-the-head fit imperative. This can be a problem for dogs who are sensitive to fitting their head through things. But for those who are fine with it, the neck warmer is a very good feature.

The back is adjustable for length, and once the perfect length is acquired, the bottom “skirt” can be secured with a snap several inches below the dog’s tail. This prevents the back of the coat from slipping sideways off the loin (lower back).

There are also leg straps like you’d find on a horse blanket, and while they are made of a soft, stretchy fabric, we can see how they might cause some discomfort for an intact male dog. The good news is that they don’t appear to be mandatory. The coat easily stays in place without them.

There are two slits on the back for both a collar and a harness attachment – a feature that many coats lack. Each slit is covered with a little flap to prevent snow or rain from easily getting inside the coat.

The front skirt and chest protector are both very well-designed and allow for full range of shoulder and leg motion.

The outside of the coat is lined with reflective strips for nighttime safety, and since darkness falls around 4 p.m. during the winter months, this is a very handy feature.



WDJ’s Product Ratings

The product has no redeeming value that we can appreciate.

🐾 We are including the product only because of its potential for improvement.

🐾🐾 The product has some value, as well as some serious flaws. Some of its features may be useful in certain applications.

🐾🐾🐾 A good product, with one or two significant flaws.

🐾🐾🐾🐾 As good as it gets. We strongly endorse the product.

Best for Active Dogs: Chilly Dogs’ Great White North Coat

Of all of the coats we tested, this coat offers the best range of motion for the dog, making it a great candidate for highly active dogs.

It slips over the head and has two adjustable points at the waist, one made with hook-and-loop (Velcro-like) fastener and the other with straps. The hook-and-loop patches are very wide, making the adjustment options more flexible. On the down side, a larger hook-and-loop patch also makes more noise. We’d suggest doing some prep work with your dog to help him make a positive association with the sound before placing the coat on his body.










The coat is lightweight, waterproof on the outside, and lined on the inside with a synthetic fleece. It includes reflective tubing for nighttime safety. The full front design keeps belly fur nice and dry. The only part of the coat that isn’t waterproof is the fleece neck warmer, which would get soaked in rain.

The range of sizing is one of the best on the market – it will fit little dogs just as well as large dogs. The company is reputed for their excellent customer service when it comes to selecting the correct size.

There are no slits for a collar or harness, and when contacted about this, the company explained that wear-

WARM WINTER COATS, COMPARED

Listed by rating, then alphabetically by company

WDJ Rating	Company and Product Name Available From	Price	Number/Range of Sizes Available	Color Options	Comments
	CHILLY DOGS GREAT WHITE NORTH Available from chillydogs.ca (Canada) and from a few U.S. retailers, including crosspeakproducts.com (800-918-7492)	\$90 to \$145	28 sizes (includes long & lean for breeds like Dachshunds and sight hounds)	8	Lightweight, waterproof outer shell, breathable and machine washable. Rated to -22F. Incredible size variation. Renowned customer service. Best range of motion. No opening for leash attachment.
	HURTTA EXTREME WARMER Available from some retail locations worldwide (see hurtta.com). In the U.S., best prices and widest range of sizes found on amazon.com	\$84 to \$94	9 sizes	5	Highly water resistant and breathable outer shell, reflective inner lining, adjustable length, full range of motion. Collar and harness openings for leash attachment.
	HURTTA SUMMIT PARKA Available from some retail locations worldwide (see hurtta.com). In the U.S., best prices and widest range of sizes found on amazon.com	\$34 to \$78	13 sizes	4	Lightweight. Fleece-lined interior. Adjustable length. Full range of motion. Harness opening for leash attachment.
	POMPPA TOPPA POMPPA Pomppa is a Finnish company. Products available in the U.S. and Canada from cleanrun.com (800-311-6503)	\$64 to \$79	12 sizes	6	Waterproof outer shell. Very warm, great range of motion, stays in place. A bit bulky and noisy. Collar opening for leash attachment.
	CHILLY DOGS TRAIL BLAZER Widest selection of sizes and colors from chillydogs.ca (Canada). Also available from a few U.S. retailers, including crosspeakproducts.com (800-918-7492)	\$76 to \$127	24 (includes long & lean for breeds like Dachshunds and sight hounds)	4	Three season coat. Waterproof outer shell, breathable and machine washable. Lined with micro-fleece. Rated to 15F. No opening for leash attachment.
	MOUNTAIN MUTT DOG COATS POWERSHIELD RAINCOAT Available from mountainmuttdogcoats.com (303-527-0850)	\$147 - \$167	6, with 2 additional length variations	6	Very lightweight and flexible. Goes on like a blanket (not pulled over the dog's head). Superb, personal customer service. A little low on the shoulders, great for warmth, less great for range of motion. Collar opening for leash attachment. Five percent of annual sales donated to CSU's Flint Animal Cancer Center.
	RUFFWEAR QUINZEE JACKET Available from Ruffwear.com (888-783-3932). Some sizes/colors are available at a lower cost from various online retailers (use a search engine)	\$80	6 sizes	3	Lightweight, packable, machine washable, neck zipper for custom fitting. A little noisy. No opening for leash attachment.
	FOGGY MOUNTAIN DOG COATS' NYLON TURNOUT COAT Made by Foggy Mountain Dog Coats. Available from various retailers, including truefitdogcoats.com (301-799-1477)	\$49 to \$103	14 (also offers breed-specific sizing)	10	Very warm. Water and wind-repellant. Fleece inner lining. Machine washable. Designed like a horse blanket. No opening for leash attachment; D-ring present on back of coat – and since the front fastens only with a hook-and-loop strip, we wouldn't recommend attaching a leash to the D-ring.
	MUTTLUKS BELTED COAT Available in the U.S. from muttluks.com (888-688-8585) and in Canada from muttluks.ca	\$50 to \$130	14 sizes	6	Warm, but bulky. Water resistant and washable. Leg strap material can be irritating. Goes on like a horse blanket (does not need to be pulled over the dog's head). Collar opening for leash attachment. Muttluks provides dog boots and products for assistance dogs, search and rescue (SAR) dogs, and disabled dogs at a reduced price or as a donation.



Chilly Dogs
Great White North

ing a harness beneath the coat tends to negatively affect how well the coat stays in place on the dog.

Another Terrific Coat From Hurtta: The Summit Parka

The Summit Parka (seen in the photo on page 7) is the next best thing to Hurtta’s headliner, The Extreme Warmer (our top pick). It’s very lightweight and the interior is lined with soft fleece.

The collar is worn high and acts as a neck warmer. It’s adjustable in two spots. Like the Extreme Warmer, the coat is easy to put on and take off, but must be pulled on over the dog’s head.

The back is adjustable for length and covers a dog’s behind nicely, although there’s nothing to secure it in place once it’s adjusted (except those stretchy leg straps we’re not big fans of). The overall design covers the chest and tummy well, and allows for full range of motion for the active dog.

There’s a single slit on the back for a harness attachment, covered with a flap to keep your dog’s back dry. The flap is semi-sealable with a couple of well-positioned snaps.

Our Last 4-Paw Pick: Pomppa’s Toppa Pomppa

The Toppa Pomppa is made for serious cold (we wouldn’t expect anything else from a company based in Finland, with

its *very* long and *very* cold winters!). The coat is very warm and covers the entire body really well. It allows for great range of motion – there’s lots of space for shoulders to move – and stays put even on highly active dogs.

The coat features reflective piping and a split in the back of the skirt for the dog’s tail. It’s easy to adjust with a single strap, and the folded collar can be lifted to protect the neck against the wind.

There’s a handy slit at the collar level for leash attachment. It’s a bit noisy and bulky, but again – this one’s made for serious cold.

THREE-PAW PRODUCTS

The next set of coats are also very nice products, but each presented us with something that made them less than ideal, in our estimation.

Chilly Dogs’ Trailblazer

The Trailblazer is similar to the Chilly Dogs coat to which we gave a four-paw rating (the Great White North) in that the majority of it is waterproof, it’s super lightweight, and has reflective tubing. The difference is that the Trailblazer has a single hook-and-loop attachment (no straps or clips), the dog’s belly is partially covered, and only the *front* of the neck is made of stretchy fleece (it’s not a full neck warmer).

It fits a little low on the shoulders and doesn’t provide as great a range of motion as the Great White North. Our



Chilly Dogs
Trailblazer



Pomppa
Toppa Pomppa

model wasn't particularly comfortable in the Trailblazer, and she normally wears anything! We are certain we used the correct size for her. This one also requires a harness to be fitted over it, as there are no collar or harness slits. Still, it's a good quality coat.



Mountain Mutt Powershield Raincoat

Mountain Mutt Dog Coats' Powershield RainCoat

The Powershield is super lightweight and flexible. It goes on like a horse blanket – a convenient option for those dogs who aren't keen on fitting their heads through things. It attaches with hook-and-loop fasteners on the front and underneath at the dog's tummy level. The collar can be folded down or straightened to keep the back of the neck warm.

The coat model we tested has a wide opening at collar-level for leash attachment.

While the coat provides lots of coverage for warmth at shoulder-level, it might rest a little too low and it restricted movement on our model.

Ruffwear's Quinzee

The Quinzee offers a unique feature: It can be folded into a little built-in



Ruffwear Quinzee

pouch, making it the only packable coat we tested. The polyester fabric and synthetic insulation make it very lightweight. There's a bit of reflective piping, one strip on the front of the neck and one on the rear. There's also a loop built into the back of the neck to attach a safety light sold by Ruffwear.

There's a small zipper on the neck, facilitating getting the coat on and off. The adjustable waist strap is so neatly tucked into the design that we almost missed noticing it!

The coat feels a little stiff; it doesn't move side to side with the dog's rear end. The interior is also lined with a polyester fabric, which seemed to contribute to the overall "noisiness" of the coat. Sound-sensitive dogs might balk at wearing it (or even just having it put on). There are no openings for a harness or collar, and the length of the coat's collar would necessitate attaching the dog's collar very high on his neck.

TWO-PAW PRODUCTS

It feels a little harsh to rate these coats with only two paws, because, after all, we did find them to be quite useful for some applications. But each had a few more faults or quirks than the higher-rated coats.

Foggy Mountain Dog Coats' Nylon Turnout Coat

The Nylon Turnout Coat is like a mini horse blanket, complete with criss-cross elastic belly straps and surcingle buckles. It's super easy to put on and take off and doesn't require a dog to fit his head through anything. There's an additional hook-and-loop attachment on the front across the chest.

A D-ring on the back looks like it might be intended for a leash attachment. We looked at this from every angle and feel that it's not trustworthy in that capacity, as a dog can successfully back out of the coat if determined enough, leaving you with a leash attached to an empty coat. It also wouldn't be recommended for dogs who pull on leash, as the coat is only held together in the front by the hook-and-loop patch.



Foggy Mountain Nylon Turnout Coat

The coat provides lots of warmth across the back and sides, but as a trade-off, it's a bit bulky, heavy, and not very flexible. While it's a very good-looking coat, and would help warm a sedentary dog, it's not ideal for an active dog.



Muttluk Belted Coat

Muttluk's Belted Coat

The Belted Coat is thick and warm, albeit a little bulky. It goes on like a blanket (again, a plus for dogs who are concerned about gear that goes over their heads). It's secured by two buttons on the front and an adjustable belt around the tummy. There are two built-in leg straps made of plain elastic, which our model found irritating.

The length of the coat is good, but the coat wouldn't stay in position on our model without the use of the pesky elastic leg straps. The chest and upper part of the tummy are well-covered to conserve warmth. There's a slit on the back at collar-level for leash attachment. 🐾

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Barkaholics Not-Very Anonymous

Owners of these dogs readily admit they have a problem – but what can be done about it?

Most dogs bark – but some bark so frequently and/or in such long “jags,” that the behavior annoys everyone nearby. Determining the reason for your dog’s barking is key to solving it. For example, you will take a different tack with a dog who barks to demand your attention (like this little dog) than a dog who barks in excitement at other dogs.

My dog Shadow is a barkaholic. If there were a 12-step program for such a condition, she would be a good candidate to attend. She likes to bark when she is happy and excited, when she is concerned, when she would like something from us, when something surprises her, when other dogs bark, and mostly, when squirrels run through the trees in our backyard. The squirrel bark is the worst – sharp and shrill and so loud that it makes your ears hurt.

The trouble with having a dog who barks for a variety of reasons is that there isn’t one easy answer for getting her to stop. People often see barking as a single problem; just last week I was asked by several students in my class, “How do I stop my dog from barking?” I couldn’t give a simple answer. The solution to barking problems depends on understanding several factors:

- When and where is it happening?
- Why is it happening? What is the specific trigger?
- What is the dog getting out of barking? What is reinforcing the behavior?

And if your dog, like mine, barks in several different situations, has multiple triggers, and the reward varies, you may need more than one solution to help your dog live a quieter life. But once you can identify the when, where, why, and what, you can come up with a training plan to solve the problem.

DIFFERENT REASONS, DIFFERENT SOLUTIONS

Remember that barking is normal behavior for dogs. It is a form of communication. Most dogs bark some of the time and often for very good reasons. Here are some of the most common:

■ **They are excited!** There are many potential triggers for excitement barking. Perhaps your dog barks when you first come home or when a friend comes to the door. Dogs who bark when they are excited may bark in play, or when they see something they like, or when they are amped up for no apparent reason.

■ **They want something.** This is often called demand barking, but in my house, we call it bossy barking. I live with herding dogs and they do tend to take charge. “Hey, don’t you know it is time for a walk?!”

Demand barking is also common when training with food – when dogs get frustrated because the treats aren’t coming fast enough, for example, they may bark to remind



you to keep the food flowing. Barking is also one of the ways that dogs have to ask for what they want or need. A dog may bark when she needs to go outside to potty, and this may be a very good thing!

■ **They are alerting to something.** Most dogs alert-bark to some degree. They may bark when someone comes up to the house, or when there is an unusual noise, or when another dog in the neighborhood barks.

Most of us appreciate some degree of alert barking (for example, I'd be very happy with my dog if she barked if someone were trying to break into my house). The problem with alert barking comes when our dogs are barking at things that people think are inconsequential or when they continue barking when we think they should stop.

■ **They are afraid.** We all have things that scare us and so do our dogs. Recently, I was walking with my dog on a familiar path, a place we walk almost daily. As we came around a bend, there in the middle of the path was a pile of boulders. My dog was so surprised by this new thing in our path that she became very afraid – and barked like crazy.

This type of startle barking is relatively common in adolescent dogs like Shadow. Once she stopped barking, we went and investigated the boulders and she realized they were just rocks and all was good. Some dogs, however, have more significant fears – they may be afraid of men, or kids, or other dogs, or hats, or skateboards. When a dog barks because of an ongoing fear, that fear will need to be addressed before the barking problem can be solved.

■ **They don't do well when alone.** Many dogs will experiment with barking when they are alone and bored. Maybe they bark at the squirrels or the neighbor's dog. Boredom barking often has elements of alert barking, excitement barking, or demand barking. But barking when home alone can also be a symptom of separation distress or anxiety. When dogs are

Just Say No to Bark Collars, Air Horns, Squirt Bottles, and Other Punishments

There are several reasons I don't use this type of punishment for barking.

First, I don't like to do anything to my dog that is intimidating or that causes pain or fear. Shock collars work by creating pain, noisemakers such as air horns work by scaring the dog, citronella collars and squirt bottles work by startling the dog or creating an unpleasant sensation. I do not want to do any of these things to my dog.

Also, I don't think they are particularly effective in most situations. I will confess that in my distant past, I have used all of these in attempts to curb barking behavior. While I *sometimes* saw a short-term change in the behavior, in the long run the barking always returned. (And the few times I have seen punishment effectively stop barking, a kinder choice would have worked as well.)

Finally, the fallout from using these devices can be significant. Shock collars can cause aggression issues, noisemakers can add to startle and sound issues, and squirt bottles can make your dog want to avoid you! Enough said.

barking when home alone, we need to figure out why in order to effectively help our dogs.

LET'S SOLVE THIS PROBLEM!

Once you have identified why your dog is barking, you can follow these steps to solve the problem:

1 MANAGEMENT FIRST. Management means finding ways to prevent your dog from barking while you are working on changing the behavior. Your management steps will vary depending on your dog's trigger.

For example, if your dog barks each time someone walks by the front of the house, you may need to block the dog's view of the street with window coverings or plan to have the dog in the back of the house when you aren't actively training.

For a dog who barks when scared, you may need to avoid those things that make your dog afraid while you work through a behavior modification plan. For a dog who barks when playing with his pal, you may need to interrupt the play often so that the dogs don't become quite as excited. These are all forms of management.



2 CHANGE YOUR DOG'S REACTION TO THE TRIGGER. Sometimes solutions to barking problems are as simple as changing your dog's relationship to the trigger (notice I said simple, not easy!).

So, for example, if your dog barks excitedly when you come home from work, you may find success with being a little less interesting when you first come home. If you (the trigger) become less exciting, your dog will be less likely to bark. For a dog who is afraid of men, embarking on a counter-conditioning program with a qualified trainer may help solve the problem. When the fears are alleviated, the barking will likely stop on its own.

3 TEACH AN ALTERNATIVE BEHAVIOR. This can be a key component in solving barking problems. What else can your dog do instead of barking (and the answer can't be "not barking")? Here are some ideas: If a dog barks at other dogs on a walk, you can teach her to look at you and get a

treat each time she see another dog. If a dog barks at the front window, you can teach her to run and find you in the house rather than bark. If a dog barks in excitement, you can teach her to grab a toy and play when excited. If a dog barks to get you to take him for a walk, you can teach him to sit in front of you to remind you it is time to go out instead. With enough practice, those things that previously triggered

your dog to bark will now trigger the alternative behavior instead.

4 CHANGE THE CONSEQUENCE. Let's face it, most barking is intrinsically rewarding to the dog. A dog barks when someone walks by the house, the person continues walking – and the barking is reinforced by the person going away. Your dog barks at you for attention, you turn around and

ask him to stop – and the barking is rewarded by your attention, even if it is scolding.

Changing what happens *after* he barks can impact his barking in the future. For example, if your dog barks at you for treats, putting the treats away instead of giving him one may be part of the solution.

As another example, if a dog barks when he sees his best pal, you may help him learn that approaching quietly means he will have the opportunity to say hi or to play – and that barking as he gets closer causes you and the other dog's owner to part ways, ending his opportunity to play.

What About Timeouts?

A timeout works by taking away the opportunity for reinforcement. I am not a huge fan of timeouts. They are difficult to do well and are often used unfairly, creating unnecessary frustration or stress for the dog – and are totally inappropriate for a dog with separation anxiety. However, I will very selectively use timeout for one type of barking – demand barking – but only *after* other criteria have been put into place.

In my opinion, it's unfair to use a timeout for a behavior before a dog has been taught an alternative response – in this case, something he can do instead of barking to ask for what he wants. If your dog barks to go outside, you can teach him to ask with a gentle nose nudge instead. For dogs who bark to get you to play, teach the dog to bring you a toy instead of barking. For dogs who bark to demand treats, teach "settle" as a default behavior when food is present.

In addition, before using a timeout, dogs need to understand an "all done" cue – something that lets them know that the opportunity for whatever reinforcement they want is no longer available. "All done" means there is not a chance that they can get the reward they are looking for.

Once the dog understands that another behavior can get him what he wants and he understands that sometimes he cannot have what he wants, only then, if it is still necessary, I will use a five- to 10-second timeout to let the dog know that barking is not an acceptable way to ask for what he wants. Here's how it works:

- When my dog wants to play, she can go grab a toy. When she brings me a toy, I immediately engage with her. (This is especially important when you are first teaching your dog an alternative response – it has to work for her, too!)
- If, instead, my dog barks to get me to play, I mark the second the barking starts by saying calmly, "Too bad!" and I get up and walk into another room and close the door. I return in five to 10 seconds (assuming the barking has stopped). If my dog barks again, I repeat. If my dog grabs a toy, I play.
- If my dog comes and asks me to play and I cannot at that moment, I will give her the "all done" signal so that she knows that playing isn't an option at that moment. But I will take note that she needs some attention and will give it to her as soon as I can.

If a timeout is done well, you will generally see a dramatic reduction in barking in just a few short training sessions.

5 TEACH AN INTERRUPTER. You can teach your dog a "quiet" cue that can interrupt a barking cycle. The key to teaching this is to do it when the dog is *not* barking, rather than trying to teach it when the dog is already barking.

When your dog is already being quiet, say "Quiet," mark it with the click of a clicker (or another marker, such as the word "Yes!") and then reward your dog. Once your dog hears the word "Quiet" and starts orienting to you in expectation of the treat, switch to marking and rewarding the orientation.

Once you've practiced a few dozen times, you can give it a try when your dog is barking – preferably, a

low-key sort of bark (don't start when she's about to lose her mind over a squirrel on the sidewalk right in front of you!). Say "Quiet!" and then when your dog glances at you, mark (click or "Yes!") and give her a tasty treat.

Teaching a "Quiet" cue will seldom completely solve a barking problem, but it can interrupt the bark-



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ing long enough for you to direct your dog to do an alternative behavior.

6 HELP YOUR DOG LEARN TO BE CALM. Barking is almost always coupled with overexcitement. A dog engaging in a calm activity is less likely to bark than a dog engaged in an arousing activity. While helping your dog learn to be calmer isn't directly addressing barking, it can have a big impact. You can help your dog learn to be calmer by:

- “Capturing” calm by rewarding your dog when she is already settled.
- Teaching your dog to settle on a bed or mat.
- Practicing impulse-control exercises can help a dog focus when excited. Examples of these exercises include tug-sit-tug, down before ball tosses, and asking her to sit and wait quietly before you put her food bowl down.
- Providing low-key exercise and activity rather than lots of ball or chase games. Often when we have easily overstimulated dogs, we want to wear them out with activities such as fetch or dog-to-dog play. While these are great activities for many dogs, they can also wind dogs up – and amped-up dogs are much more likely to bark. Long leisurely walks or scent games can tire your dog without getting her overexcited.

7 BE REALISTIC. Dogs bark. Barking is perfectly normal behavior and not something that is likely to be eliminated completely. For example, instead of expecting your dog not to bark at all when people come to the door, consider allowing a *few* barks, and then giving the cue (and rewards) for quiet. And if your dog barks out of fear or anxiety, remember that those issues must be addressed before you can realistically expect your dog to stop barking.

BACK TO THE BARKAHOLIC Unfortunately, many dogs who bark

excessively do so in more than one area. This means that you have to get creative and proactive to help your dog learn to live a quieter life.

Following the multi-step approach above, we came up with a training and behavior modification plan for my barkaholic, Shadow. Remember that she barks when she is excited, in response to other dogs barking, when she is startled, when she wants something, and at the squirrels in the yard, and more recently as she's grown up, alert barking has joined the list. Basically, she was barking almost all the time!

To reduce her excitement barking, my partner and I worked with her to be overall be calmer and more focused in a variety of situations. Some of the exercises we are using to do this include impulse-control games, settle exercises such as mat work, and counter-conditioning specific triggers to reduce excitement.

For her alert barking, we taught alternative responses like redirecting to us when she sees or hears something that she would ordinarily bark at, such as another dog barking or the neighbor's car door slamming.

For her startle barking, we are using straightforward classical conditioning; things that surprise her make treats rain from the sky!

For demand barking (such as for treats or attention or a ball toss), we have taught her to ask in other ways (by bringing us the toy, for example, to solicit play).

Because barking at the squirrels had elements of excitement, alerting, and demand barking (she would bark to make the squirrels run across the tree-tops), we've had to get very creative.

First, we employed management by limiting her access to the yard and by blocking her view of the squirrels through the windows. We also kept her on leash in the yard when we went



The author's dog, Shadow, is living proof that all of the exercises and techniques described here really work! Her barking has reduced in frequency by about 80 percent, and she continues to improve.

outside together at the beginning of this training.

I worked with Shadow to be calmer around the squirrels by doing basic obedience and mat work at a distance from “the squirrel trees,” then gradually moved closer until she could respond when we were near those trees.

Also, I have been teaching her to come to me, away from the squirrels. We started at a fair distance from the trees and are slowly moving closer and closer to the trees to work on this. When she sees a squirrel, she now runs to me for huge rewards – and this has helped reduce her fixation. We also use brief timeouts if she did start barking.

By employing *all* of these techniques, Shadow has gone from being a dog who barked in *most* situations to a dog who only very selectively barks and who is learning to bark less and less every day. Her barking is overall about 80 percent better, a huge improvement!

I have to admit that it has been a lot of work and has taken about six months to get to where we are today – from non-stop barking all day long to a dog who only barks occasionally and mostly appropriately. It is a work in progress, but the effort is totally worth it because we will now have many, many years of a mostly quiet life together. 🐾

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Dogs vs. Wolves

Why we shouldn't look to wolves to inform us as to how our dogs should be treated or trained, and why words like "pack," "alpha," and "dominance" are nearly always misused.

Editor's Note



*This excerpt is the first chapter of **Dog Smart**, a new book by Linda Case, MS, founder and head trainer at AutumnGold Dog Training Center in Mahomet, Illinois, and the author of a number of books on training and animal nutrition. Case also taught at the University of Illinois Department of Animal Sciences and College of Veterinary Medicine for 20 years.*

*To purchase **Dog Smart** or any other of Case's books, see "Resources," page 24.*

The best way is to arm yourself with facts and then condense those facts into a short and easily understandable response. In this chapter, we review current knowledge regarding the dog's ancestry, domestication and basic social behavior. Then, I will provide you with a few "Talking to Joe" responses that you can use in your classes, when teaching seminars, talking to other dog owners, and, of course, when attempting to convince neighbor Joe (who may need a lot of convincing).

IT'S ALL GREEK (ER, LATIN) TO ME

Let's start with the dog's taxonomy, which is the hierarchical system that we use to classify animals. Although this information may seem somewhat academic, it is important for trainers to know the dog's taxonomy because it allows us to see just how closely related the dog is to the wolf and other canid species. The broadest classification groups are domain and kingdom, followed by the increasingly narrow groups of phylum, class, order, family, genus, and species. The genus and species Latin names are how we typically identify animals, including the dog.

The domestic dog is classified within the

Just recently, during my school's beginner class orientation, a new student asked this: "My neighbor Joe (who knows a lot about dogs), told me that because wolves are the ancestors of dogs, we should train dogs according to how wolves behave in packs. He told me that I need to be 'alpha' and that my dog must recognize my dominant status during training. Will we be making sure that my dog Muffin (a Mini-Doodle) knows that I am dominant?"

And I think, "Here we go again."

The problem with this rationale – the dog's primary wild ancestor is the wolf; therefore we should base our training practices on what is known about wolf behavior – is that, like many folklores, it contains elements of truth plus a slew of falsehoods and mythologies.

How do you answer in one minute or less to a skeptical student, friend, or neighbor (Joe)?

Wolves are not the ancestors of our modern day dogs – more like cousins. What's more, dogs have an ability to understand and learn from human communication signals; wolves don't.



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TAXONOMY OF DOGS AND WOLVES

TAXONOMIC GROUP	DOG'S CLASSIFICATION	WOLF'S CLASSIFICATION
PHYLUM	Animalia	Animalia
CLASS	Mammalia	Mammalia
ORDER	Carnivora	Carnivora
FAMILY	Canidae	Canidae
GENUS	<i>Canis</i>	<i>Canis</i>
SPECIES	<i>familiaris</i>	<i>lupus</i>

“phylum” Animalia, the “class” Mammalia, and the “order” Carnivora. Carnivora includes 17 families and about 250 different species.

Carnivores are so named because of a set of enlarged teeth (the carnassials) that comprise the enlarged upper fourth premolar and the lower first molar on each side of the mouth. Take a moment to open your dog’s mouth and take a look at those teeth. If you live with anything larger than a Chihuahua, you will notice that these are some mighty big chompers.

Interestingly, despite these dental modifications, not all of the present-day species that are found in Carnivora are strict carnivores. Some, such as bears and raccoons, are omnivorous and at least one species, the panda, is primarily vegetarian.

“Families” are groups within the orders, with dogs found in the family Canidae and in the “genus” *Canis*. Other canids within the Canidae family are wolves (two species), coyotes (one species), and foxes (five species).

The wolf and the dog hang together taxonomically all the way down through genus and only separate when classified as separate species; wolves are *Canis lupus* and dogs are *Canis familiaris*. (Note: There is still a bit of disagreement about this among scientists. Some argue that dogs should

be classified as a sub-species of wolf: *Canis lupus familiaris*. There is no consensus about this and you may see dogs classified both ways.)

COUSIN, NOT ANCESTOR

So, this is where you can start with your answer to Joe: Dogs and present-day wolves are different species within the same genus. The Latin name for the domestic dog is *Canis familiaris* and the present-day Gray wolf is *Canis lupus*.

To which, Joe replies: “Yeah, but the wolf is the dog’s ancestor, right?” This is one of those pesky partial truths. The domestic dog and today’s

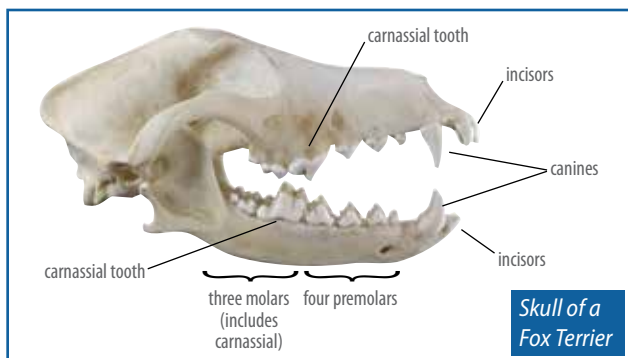
Gray wolf share a common ancestor, a type of wolf that lived at least 45,000 years ago and has since gone extinct. Much in the same way that the chimpanzee (*Pan troglodytes*) is the closest living relative to present-day humans (*Homo sapiens*), we do not (and should not) refer to the chimpanzee as our ancestor. This is incorrect. Just as we share a common ancestor with present-day great apes, dogs share a common ancestor with today’s wolves.

OLDEST BEST FRIEND

However closely dogs may be related to wolves from an evolutionary perspective, they are different in many important ways. The first distinction is that dogs, unlike wolves, are a domesticated species. They are in fact, the first animal that humans domesticated. We were hanging out with dogs several thousand years before we began tending to chickens, goats, pigs, or cows, and even well before cats were living with us (who, by the way, maintain that this arrangement was entirely their decision, not ours).

Scientists still do not concur about the exact timing, place, or circumstances surrounding the creation of dog, but there are several general facts with which most currently agree:

- Domestication, the process by which the ancestral wolf was gradually transformed into the dog, took place sometime between 32,000 and 18,000 years ago.
- The most recent evidence suggests that the dog was domesticated more than once, from two different and geographically separated (now extinct) wolf populations that were living on opposite sides of the Eurasian continent. Over time, these two groups of proto-dogs migrated with humans and intermingled.
- Domestication began during a time when people were still living a nomadic lifestyle, periodically moving their camps from place to place. Our more settled way of life did not become



If you brush your dog’s teeth regularly, you are already familiar with the carnassials because they present the flattest and largest tooth surface that you run your brush across – and are also a popular spot for plaque and calculus to deposit. All of the species that are classified with dogs in this order have these impressive teeth, which are adapted for shearing and tearing prey.

Carnivores also have small, sharp incisors at the front of the mouth for holding and dissecting prey. These are the teeth that Muffin uses to de-fluff her new stuffed squeaky toy.

The four elongated canine teeth evolved for both predation and defense.

established until 12,000 years ago with the invention of agriculture.

- The early stages of domestication of the dog appear to have been unintentional. As wild wolves identified a new ecological niche – the food scraps and garbage that were associated with human campsites – they began to follow human camps and to live on the periphery of temporary settlements to scavenge food.
- The selective pressures on these camp-dwelling wolves favored less timid individuals who had a higher tolerance of humans. Less fearful individuals would experience increased opportunities to feed and reproduce because they stayed longer and fled less readily than more timid animals. These new sub-populations of wolves were also feeding themselves more through scavenging and less through hunting (predation).
- Over generations, selective pressures led to a proto-dog who was naturally tolerant of human presence and began to live permanently near human camps and settlements. This evolving dog was smaller, had a shorter snout, wider skull, and smaller teeth compared with wolves.

PACK BEHAVIOR?

Changes also occurred in the wolf's social behavior during domestication. As early dogs began to live permanently as camp scavengers, the selective pressure for social hierarchies and strict pack order was relaxed as pack hunting behaviors were no longer needed and were replaced by semi-solitary or group scavenging behaviors. Scavengers became more tolerant of the presence of other dogs and the presence of protected nesting sites also reduced the need for cooperative raising of young.

It is theorized that during this branching of the dog and wolf's evolutionary tree, the wild version of wolf remained a pack-living predator, while the evolving dog became specialized in adaptations for living in close proxim-

ity to humans. Dogs also evolved a set of social behaviors that enhanced their ability to communicate and cooperate with human caretakers. It is from these semi-domestic scavenger populations that individual dogs are believed to have been selected and purposefully bred by humans for further taming. Eventually (many generations later), selective breeding of these dogs led to the development of different types of working dogs and, most recently, the creation of purebred breeds.

ORIGINS OF THE DOMINANCE MYTH

Given this current understanding of the dog's domestication, why is it that Joe and his friends continue to believe that pack order and dominance hierarchies are so important to dogs and should be used in dog training? For this explanation, we have to look more to recent history, going back only about 45 years.

During the 1970s, researchers who were studying wolf behavior focused almost exclusively on a theory called the "hierarchical model of pack behavior." This theory proposes that individuals within a wolf pack are highly concerned with social status and live in a constant struggle for dominance with one another. Because of the dog's close evolutionary relationship to the wolf, it was assumed that dogs would behave similarly.

It became popular to view dogs as pack-living animals who adhered to strictly structured dominance hierarchies – both with their human owners and with other dogs.

As a result of this highly popularized (but *incorrect*) concept, almost any behavior that a dog offered that was not in compliance with an owner's wishes came to earn the label of "dominance." An entire collection of dog training methods grew out of these beliefs, most of which focused on ensuring that that owners established dominant (also referred to as "alpha") status over their dogs. These methods emphasized physical coercion and punishment, and promoted exercises that were believed to be necessary for

effectively establishing the owner's dominant status.

INTERESTING THEORY...

Too bad this concept is wrong. There are several errors with this way of thinking. The first lies in the set of false beliefs about wolf behavior that prevailed in the 1970s. Wolf researchers have since reevaluated the appropriateness of using the hierarchy model of social behavior and have found it to be lacking.

Despite the widespread belief that wild wolf packs exist in a perpetual state of dominance challenges and bids for enhanced status, the collected evidence shows a glaring absence of these rigid types of relationships. There are few reports of wolves seeking higher positions in their pack, fighting over leadership, or physically dominating other wolves through aggression or alpha rolls.

Rather, today's wolf experts tell us that the social behavior of wild wolves typically reflect cohesive, well-functioning family units that are built around cooperation rather than conflict. Pack peace is maintained not through aggression and perpetual battling for dominance, but rather through ritualized postures designed to avoid fights and cooperative behaviors such as hunting together, sharing food and raising young together. A parent-family model better describes wolf relationships in packs than does an outdated hierarchy model that focuses on strict social roles and conflict.

This doesn't mean that wolves never display social dominance, however, or that the concepts of dominance and submission are completely useless as descriptors of behavior. Wolves (and other animals, including dogs and humans) display social dominance *situationally*, most often when attempting to defend a valuable resource. It is not the entire concept of dominance and dominant/submissive signaling that has been dispelled, but rather the correctness of a simple hierarchical pack structure. That concept is considered obsolete and inaccurate today.

Additionally, our understanding of both learning theory and the cognitive ability of animals has evolved significantly over the years. Attempting to use a simple dominance hierarchy model to explain all things wolf (and dog) has fallen short when considering new evidence that supports the existence of complex thought, planning, perspective taking, and even rudimentary elements of a “theory of mind” in animals, including wolves and dogs.

And finally, we know much more about the social behavior of dogs than we did back in the 1970s. To put it bluntly: Dogs are not wolves. They do not form packs like wolves (not even at the dog park – sorry, Joe, wrong again), nor do they possess a natural tendency to battle for dominance or a need to constantly challenge humans or other dogs for higher status. Their social lives and relationships are also, just like wolves and other animals, much more complex than a simple concept of dominance hierarchy is capable of describing fully.

For example, one of the most striking ways in which dogs differ from wolves is in the dog’s ability to understand and learn from human communication signals.

The reality is that the social behavior and cognition of the dog has been profoundly influenced by domestication. Today’s dog is described by some as a socialized wolf, a variant who is well-adapted to life with humans and has lost the need to exist in a stable (wolf) pack.

In groups, feral dogs do not typically hunt cooperatively and only rarely share care of offspring. In homes, the domestic dog’s social behavior is directed more toward working with and communicating with humans, not competing with us for some arcane concept of dominance. Similarly, the relationships that dogs share with other dogs in their homes are not analogous to a wolf pack. Rather dogs have social partners (friends really) and acquaintances, just like humans. Importantly, the social groups of dogs, with humans

and with other dogs, have characteristics and structures that are adaptive for domestication and for living in close proximity with their human caretakers. These characteristics are all uniquely and amazingly *dog* (not wolf).

TALKING TO JOE

So, how do we distill this down to facts that will convince Joe that his dog (a) is not a wolf and (b) does not require dominating? Here are a few talking points that you can modify as needed for your particular Joe.

- Yes, Joe, dogs and wolves are closely related. However, today’s wolf is not actually your dog’s ancestor. Rather dogs and wolves are cousins, similar in many ways to the relationship between you and a chimpanzee, Joe. Just as you would not look at chimpanzee behavior to inform you how to raise your kids (at least I don’t *think* you would), you should avoid focusing on wolf behavior to tell you how to raise and train your dog.

- Dogs differ from wolves in some amazing ways. They are more attuned to our facial expressions and communication signals, and they are better at cooperating with humans than are wolves. Dogs also often form friendships with other dogs in their home or community, and despite the continued attempts by some to describe it in this manner, dogs do not live in a constant state of dominance-dictated competition with other dogs.

- So, time to chill, Joe. Don’t worry so much about your dog’s status in your home or whether or not he is attempting to dominate you, your family and the world. (He’s not.) Rather, focus on all of the amazing traits and talents that your dog has inherited as a dog (not a wolf) and use those characteristics to train him to be a good family companion and community member.

- Oh, and Joe, drop the alpha status obsession once and for all, please? It embarrasses all of us, including your dog. 🐾

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Note: This is not a comprehensive reference list. Rather, it includes studies that were discussed in the chapter and additional readings. For complete bibliographies, see the full list of books and textbooks at the conclusion of Case’s book, *Dog Smart*.

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