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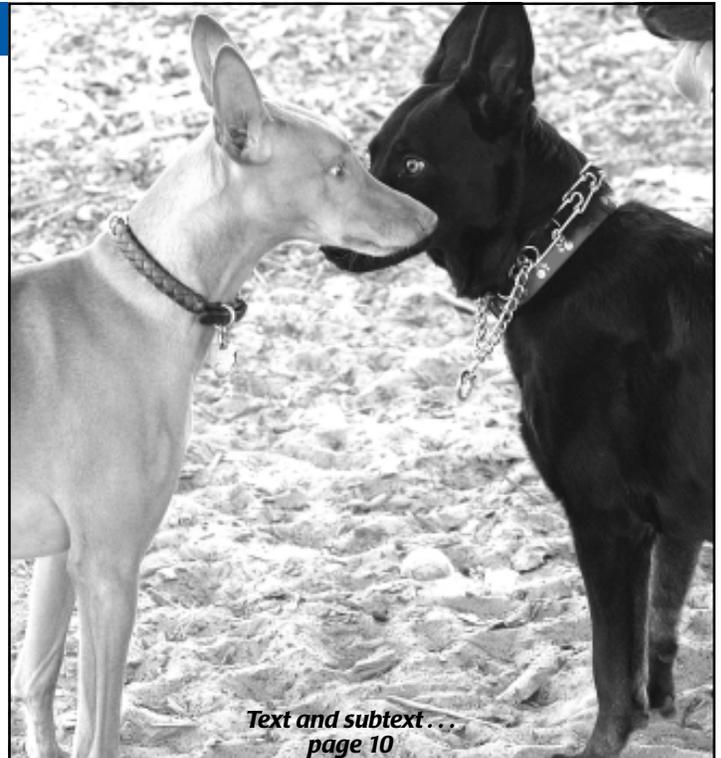
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Do Fence Them In

This is one job you must overdo.

BY NANCY KERNS

Hannah, my brother's dog, is a reformed escape artist. Keith lives in a house that is situated in a five-acre fenced compound in the country (it's a self-storage facility). You'd think this would be dog *heaven!* But as a pup, Hannah learned that there is *much* more fun available *outside* the fence and down the road – other loose dogs, kids playing, ponds to swim in, deer to chase. Her mentor was a neighbor's dog who used to escape *his* yard and run along the outside of Hannah's fence. "Hannah! Come on out so we can play!" She did, and what fun!

Keith nearly lost his mind trying to find and block all the places where Hannah could slip out. The problem was, she's a big, young, athletic dog who needs a lot of exercise; she comes unglued when she doesn't get to play outside of Keith's secure but tiny private yard. He'd take her out to the big yard after the storage facility was closed for the evening so she could chase hard-hit tennis balls and run along with the manager's golf cart up and down the aisles of lockers until she was tired.

Frequently, though, at some point, Hannah would run after a ball – and then keep running for the far fence. By the time Keith (running after her and yelling her name) could reach the far side of the compound, she was through a hole only she knew about and off for adventures unknown. Luckily, she would always come back within an hour or two, muddy and happily exhausted.

Keith spent hours filling gaps beneath the chain-link fence, but since he never managed to witness the moment or site she wriggled through, his work felt pointless and endless. He called me several times for advice, and I

sent him WDJ articles about teaching her to "Come!" and developing off-leash reliability. But training skills like these can take a long time, *lots* of successful practice – and as few opportunities to practice the unwanted behavior as possible. The escapes kept happening. Half joking, I once suggested that Keith tie Hannah's tether to one of those big rubber balls that have a handle – the kind little kids sit on to bounce. She could easily drag it around, but when she crawled under the fence, the ball would get stuck and hold her there, marking the spot where she got out like a buoy!

One afternoon, Hannah escaped right after Keith had *taken her collar off* and given her a bath. She was running around the big yard in that exuberant post-dog-bath way, when she ran around the house and took off for the mystery exit. She didn't come home that night. The next morning, after driving around his neighborhood calling, checking the roadside ditches, and searching the kennels at his local shelter, Keith made a "lost dog" flier and started posting them. One pole a mile from his house already had a "found dog" flier on it – with Hannah's abashed countenance appearing between the tattooed arms that held her for the photo. Mr. Tattoo was grateful for the reward money, although his wife hinted that they might have to spend more on cleaning the sofa where Hannah had spent the night!

Fortunately, Hannah seems to have (survived long enough to have) grown out of her trips "abroad." Other dogs may not be as lucky. Read Pat Miller's article (next page), and take her advice about over-fencing your yard before you bring your new dog or puppy home.

NK

MISSION STATEMENT: WDJ's mission is to provide dog guardians with in-depth information on effective holistic healthcare methods and successful nonviolent training. The methods we discuss will endeavor to do no harm to dogs; we do not advocate perpetrating even minor transgressions in the name of "greater good." We intend our articles to enable readers to immediately apply training and healthcare techniques to their own dogs with visible and enjoyable success. All topics should contribute to improving the dog's health and vitality, and deepening the canine/human bond. Above all, we wish to contribute information that will enable consumers to make kind, healthy, and informed decisions about caring for their own dogs.

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Preventing Great Escapes

How to safely confine burrowers, bounders, beavers, and bolters.

BY PAT MILLER

Otis the Bloodhound was an opportunistic escapee. I discovered his talent one day while working at the front desk at the Marin Humane Society, early in my animal protection career. A woman came in asking if we might know where a Bloodhound lived, because he kept visiting her house every day. He was charming, she said, but she worried that he might get hit by a car.

A Bloodhound owner myself at the time, I was curious where this errant Bloodhound might live; it's not a very common breed. But when I asked the woman for her address, I was dismayed to hear she lived around the corner from me. Could it possibly be *MY* safely fenced dog who was making house calls around the neighborhood?

It was, indeed. Unbeknownst to me, Otis had discovered a hole in the fence behind

some dense bushes. He waited every morning until I was gone, crawled out the hole, spent his day visiting neighbors, and returned home in time to greet me innocently at my back door.

I was lucky. Otis wasn't a dedicated escape artist – a solid patch to the fence ended his wanderings. Other owners often work much harder to keep their canine fugitives safe at home.

Escape artists

Roaming is an innate behavior for dogs. They are hunters and scavengers, and left to their own devices will wander a territory far larger than the average backyard. Escaping, however, is a learned behavior. Dogs who are given the opportunity to escape often do. Once they figure out how, they will try harder and harder, even when the fence is belatedly fortified. Dogs who become escape artists hone their skills to a fine edge. Keeping them safely confined at home where they belong can be a huge challenge. Our nation's animal shelters are full of escape artists.

The best avenue for managing a dog's wanderlust is to prevent him from wandering in the first place. The problem starts when you bring home the new puppy before you are fully prepared, promising to put up that fence before Rover grows up.

A tiny puppy won't wander far from the back stoop, even when you leave him out on his own for a bit. Before you know it, though, Rover is six months old, already has a habit of making neighborhood rounds, and you still haven't finished the fence. When Mr. Jones from down the road calls you up and threatens to shoot Rover if he chases his goats one more time, you rush to the hardware store to buy some metal fence posts and hog wire. Hastily you throw up a pen in the backyard that attaches to the back deck. "That should hold him until I get the rest of those post holes dug!" you think.

As you settle yourself back on the sofa to watch the last half of the football game,



Repair any problems that you observe with your fence before your dog notices the weakness and takes advantage of it.

Rover is already testing the fence; he's late for his daily visit to the Smith's garbage can! He checks out the gate latch, but it doesn't yield to his tentative pawing and gnawing. He trots around the inside of the enclosure, searching for a way out.

In the far corner he finds a three-inch gap between the wire and the ground and pokes his nose under. Getting his nose on the other side of the fence encourages him to try harder. He starts to worm his way under. The soft ground gives way beneath his claws. He digs harder. Before you can say "end zone," he's free, headed for the Smith's omelet scraps and bacon drippings. You eventually retrieve him and fill the hole, but the damage is done. Rover is on his way to a lifetime career as a master escape artist.

Burrowers, beavers, bounders, and bolters

Whether your dog's escape efforts focus on tooth or claw or he excels in feats of aerial

The Whole Dog Journal™



WHAT YOU CAN DO . . .

- **Make sure your fence is secure *before* you bring that new dog home. Even if it keeps your *current* dogs safely confined, a canine newcomer may have new talents that test your confinement system.**
- **Be careful any time you put your dog in a new containment area. Check the area first to ensure it is secure, and watch him after you put him in to be sure he's not testing the fence.**
- **Consider the safest approach – always keep your dog indoors when you're not home.**

accomplishment depends both on genetics and learning. Dogs who are genetically programmed to dig, such as Terriers, are likely to **burrow** under the fence, especially if a handy soft spot presents itself.

If, however, the first weak spot in the fence is a loose board, we can inadvertently train Rover and our Terrier to eat their way through fences, turning them into **beavers** rather than burrowers. Once Rover discovers that the fence is breachable, he'll test every spot where his teeth can gain purchase, and you'll forever spend your football-watching time patching his holes.

Herding dogs such as Border Collies and sporting breeds like Labradors have a natural ability to leap tall buildings in a single **bound**. Given the opportunity, they'll often make jumping fences their specialty.

However, you can inadvertently teach a less-athletic dog to bound over fences by starting small.

Confident that a four-foot fence will contain the Beagle-mix you just adopted from the shelter, you leave him in the backyard and go off to work. That night, your new dog greets you in the driveway after terrorizing cottontails in the neighbors' woods all day. You raise the fence six inches, positive that this will hold him. Flush from his exploits the day before, your dog has to struggle a little harder to make it over 4'6", but nothing breeds success like success. A little extra oomph, and he's out again for another rousing day of bunny-bashing.

You raise the fence to five feet this time, absolutely sure there's no way he can get over that. But again, even more confident of his jumping prowess, your dog tries a wee bit harder, and he's up and over. There's a good chance that if you had *started* with a five-foot fence Snoopy never would have tried to jump it at all. What you've done is taught him to jump higher and higher, consistently reinforcing his belief that if he just tries hard enough he can make it.

Bolters have learned to watch for a moment of human inattention, then charge through the tiniest crack in the gate or door.

While the other escape methods work best in the absence of humans, bolting requires the unintentional complicity of the visitor who doesn't know (or the family member who forgets) that Dash must be manacled and hog-tied before a door is opened to the outside world.

Once again, prevention is the better part of valor. If Dash is taught from early days to wait politely at a door until invited out, he won't learn the fine art of door-darting.

Prevention

You've heard this from me before, and you'll hear it from me again. It's *always* easier to *prevent* a behavior problem from happening than it is to fix it after the fact. There's no excuse for letting a puppy learn how to be an escape artist. Prevention measures are relatively simple. Don't let your puppy learn that roaming is rewarding – keep him at home, and stop any embryonic escape attempts in their tracks by taking the following prophylactic measures:

■ Provide a safe, secure enclosure. Before the new puppy comes home, make sure your fence is flush to the ground, or even buried a few inches. Check for rotten spots, and crawl behind shrubs and brush to look for holes or loose boards.

■ Go overboard on fence height. Raise the fence to at least five feet for a small dog (perhaps higher for very athletic small dogs like Jack Russell Terriers) and six feet for medium to large dogs. Make sure there are no woodpiles, doghouses, deck railings, or other objects close enough to the fence to provide a launch pad.

■ Teach your pup to wait at doors until invited through. Use "Wait!" at every door to the outside world, every time you open it, whether you are going to let him go through it or not (see "Wait a Bit, Stay a While," May 2001).

■ Install dog-proof latches on gates. There's no point in waiting until after he's been hit by a car to discover that Rover can learn to work the latch. In fact, a padlock will prevent accidental release from the outside by a visitor or intruder at the same time it keeps Rover from practicing his latch-opening skills.

■ Minimize Rover's motivation to roam by neutering at a young age (eight weeks or not long thereafter), and providing him with ample exercise and companionship at home (see "A Stitch in Time," June 2000).

■ Consider keeping Rover indoors when you're not home. Boredom and loneliness provide strong motivation to escape, and Rover has plenty of time to plan and execute the great escape when you are not there to interrupt unwanted behaviors such as digging under and chewing through fences.

The fix

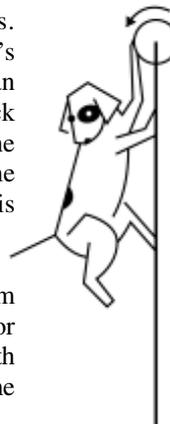
What if it's too late for prevention? Maybe you adopted Rover from the shelter after his last adopter taught him to jump a six-foot fence, and then returned him because he kept escaping. Do you give up on Rover, too? Not at all. There are lots of steps you can take to fortify your defenses and keep your escape artist at home, depending on his proclivities.

■ **Bounders:** If you have a scaler, who hooks his nails in the chain link and climbs up and over, you can cover the inside of the fence with a flat, solid surface so his nails can't get a purchase. A relatively new material, FRP (fiberglass reinforced plastic) that is now regularly used in animal shelters may withstand tooth and nail, but it may be prohibitively expensive if you have a large fenced area.

Or, you can install a "roof" at the top of the fence that comes in at a 90-degree angle; he won't be able to reach behind his head and pull himself backward over the ledge when he gets to the top. Some people use wire mesh to create an angled-in barrier – similar to those at the top of prison fences, only without the razor wire! – that impedes jumping.

Another option that I've seen work is to top your fences with a "roll bar" that prevents your dog from getting a purchase at the top of the fence and pulling himself over. This is easily installed by running a wire or rope through sections of fat PVC pipe and hanging them along the top of the fence.

If you have a sailor, who gets a good running start and clears the fence with the



greatest of ease, plant a hedge or place some other obstacle in his takeoff zone, interrupting his stride and making it impossible for him to jump. If you put your last fence extension inward at a 45-degree angle you may also fool his eye and foil his leap.

■ **Bolters:** The dog who bolts through open doors needs an airlock – a system of double gates so that if he makes it through one, he is still contained behind the next. Self-closing gate springs are a must, to prevent visitors and family members from being careless twice in a row. A good solid recall – teaching Dash to come when called – taught with positive methods, of course, is an excellent backup plan for the door darter (see “Total Recall,” December, 2000). Family members also need to remember not to panic and chase when Dash slips out – a good game of keep-away just makes door-darting more fun for the dog.

■ **Burrowers:** If you’re going to bury the fence for a dedicated burrower, bury deep

– at least six inches to a foot. If you bury it two inches, you’ll just teach him to dig deeper. You might do better setting the fence in cement, or lining your fence trench with large rocks or small boulders. You definitely need a cement pad at the gate, since you can’t bury the gate.

■ **Beavers:** If Bucky has learned to gnaw his way through your fence you could be in big trouble. Lining the inside of the fence with heavy-duty wire – like chain link – may stop him. It may not, however, and he may break teeth in his attempts to eat his way out. Sheets of FRP are good for this also. Cement block walls can be effective, but may not be aesthetically pleasing. Ceramic tiles can be glued to the blocks to make them more attractive, but they’re not cheap.

It can happen to anyone

I’m far more careful now than I was in the Otis days; my dogs are never left in the backyard if no one is home to monitor their activities. Still, that doesn’t mean that acci-

dents don’t happen. Just the other day, my phone rang. I answered, and it was Helen, my assistant, calling from the training center a few hundred feet from the house.

“I have Lucy,” she said.

WHAT?!

Lucy was supposed to be safely in the backyard! I dashed out to find the back gate open – left that way by the usually-very-careful guy who mows our lawn. Tucker was safely indoors, Dubhy and Katie were still in the backyard – only Lucy had made the great escape, and she hadn’t gone far.

It can happen to any of us. I was just thankful someone was home. 🐾

Pat Miller, CPDT, is WDJ’s Training Editor. She is also author of The Power of Positive Dog Training, and Positive Perspectives: Love Your Dog, Train Your Dog. Miller lives in Hagerstown, Maryland, site of her Peaceable Paws training center. For book or contact information, see “Resources,” page 24.

A Shocking Solution?

Many dog owners are turning to electric shock collars to keep their dogs contained. Non-visible electronic fences are quite the rage, especially in communities where shortsighted homeowner regulations prohibit the installation of physical fences. Many dog owners are pleased with the results – no unsightly fence to impede their view of the sunset, and Rover magically stays within his delineated boundaries. Many dog owners are not so pleased. There are a myriad of things that can fail with non-visible shock fencing systems. Here are just a few:

■ For most dogs, there is a stimulus strong enough to entice the dog through the fence. For some, it might be that bunny or squirrel venturing a tad too close. Once the dog is outside the fence line, he’s rarely motivated to brave the shock to get back in.

■ Some dogs learn that the shock stops once they cross the line. Dogs who are determined to escape can learn to grit their teeth and risk one shock to get to the other side.

■ Shock collars are a punishment tool, and their use risks all the potential negative side effects of punishment. They can cause fear and/or aggression. If a dog receives a shock while a child is walking by, he may associate the shock with the child and become aggressive toward children. Or mail carriers. Or joggers. Or other dogs. Some dogs have become terrified and refuse to go into their own yards after receiving shocks from the collar during the training process.



■ Electronic equipment can fail. Batteries die, and when the dog no longer hears the warning beep he is free to come and go as he pleases. Some collars have malfunctioned and delivered repeated shocks to hapless, helpless dogs until their owners arrived home from work at the end of the day to rescue them from their torture.

■ The non-visible fence does not, of course, provide the dog with any protection from intruders, so Rover is at the mercy of other dogs or humans who may enter the yard and do bad things.

■ As an advocate of positive, dog-friendly training methods, I simply reject the idea of shocking dogs around the neck for our convenience. I would much prefer a chain-link dog pen with a top, set on a cement pad, for the master escape artist.

Most dog owners want to be able to give Rover the freedom to play in the yard, however, so when all else fails, I am a bit less loath to use electric shock in a situation where the dog learns by doing. I have, on rare occasion, suggested the use of a single strand of battery-powered electric fence wire, installed at nose level on the inside of the physical fence.

While a shock to the neck that comes out of nowhere seems to confuse and even terrify a good number of dogs, an “ouch!” to the nose when they touch something seems to make more sense. After one, or maybe two touches, most dogs leave the fence alone without apparent long-term psychological trauma. A last resort, perhaps, and a very aversive one, but preferable to being hit by a car.

Canine Cancer Crisis

Know thine enemy – so you can take fast action if it strikes your dog.

BY CJ PUOTINEN

Cancer has to be the most feared diagnosis in all of medicine, one that sends patients and their families on a bewildering journey through statistics, treatment options, and life-or-death decisions that have to be made right now. Cancer has become so widespread that the care and treatment of its human patients is one of the world's largest industries. Now cancer affects a significant percentage of veterinary patients as well.

Most medical dictionaries define cancer as a disease resulting from an abnormal and uncontrolled division of cells that invade and destroy surrounding tissue. In most cases, this cell division creates malignant growths called tumors. Cancer cells often migrate via the blood or lymph, resulting in the development of additional tumors throughout the body.

Cancer has no known cause, but its risk factors include genetics, diet, hormone imbalances, exposure to radiation, viruses, vaccinations, and environmental toxins such as lawn chemicals, flea and tick dips, asbestos, and tobacco smoke.

In the 1960s, about four out of every 1,000 dogs were diagnosed with cancer in the United States each year. At that time, the most common canine cancers involved the breast in females, the testes in males, and connective tissue, skin, lymph nodes, mouth, throat, and bones in both genders.

In 1997, a Morris Animal Foundation survey found that cancer was the leading cause of non-accidental death in America's dogs. Today nearly half of dogs over age 10 die of cancer.

The similarities between canine and human cancers are striking, but there are differences. For example, dogs have 35 times as much skin cancer as humans, 4 times as many breast tumors, 8 times as much bone cancer, and twice the incidence of leukemia. Humans have 7 times as much lung cancer as dogs and 13 times as much cancer of the stomach and intestines.

Running in the family

In a 1997 Swedish study involving 222,000 dogs, the breeds at highest risk for cancer included Boxers, Giant Schnauzers, and



- WHAT YOU CAN DO . . .**
- **Become familiar with canine cancers and their symptoms.**
 - **Document changes in your dog's appearance and behavior.**
 - **Check for lumps and other symptoms while petting or massaging your dog.**
 - **Report unusual symptoms to your veterinarian.**

Bernese Mountain Dogs (all of whom had a mortality rate due to cancer of over 30 percent), Irish Wolfhounds, Cocker Spaniels, and Doberman Pinschers (over 20 percent), and Pomeranians, Newfoundlands, German Shepherd Dogs, Saint Bernards, Great Danes, Greyhounds, and Basset Hounds (over 10 percent of deaths due to cancer).

English scientists published a study in 1999 that found that in the United Kingdom, Afghan Hounds, Irish Wolfhounds, Standard Poodles, and Rottweilers had the highest incidence of cancer, while Airedales, Beagles, Dachshunds, Irish Setters, Jack Russell Terriers, Rough Collies, and Yorkshire Terriers had a relatively low risk of dying from cancer.

In a 2003 Danish Kennel Club study, researchers investigated the age and cause of death for nearly 3,000 dogs and found that cancer affected 14.5 percent of the dogs studied. Bernese Mountain Dogs, 34.4 percent of whom died of cancer, had the highest cancer rate in Denmark.

Accurate cancer statistics for America's dogs are hard to come by, but studies published by epidemiologists provide estimates



Osteosarcoma (bone cancer) most frequently occurs in canine leg bones. Amputation of the affected limb can eliminate the pain of bone cancer, but radiation and/or chemotherapy are usually needed to prolong the dog's life.

that appear in the following descriptions. Today the most common type of cancer in American dogs is skin cancer, followed by mammary cancer and lymphosarcoma.

Cancer's symptoms

The early warning signs of cancer in dogs are similar to human warning signs publicized by the American Cancer Society. These include any abnormal swelling (especially a swelling that continues to grow), sores that don't heal, weight loss, bleeding or discharge from any body opening, a reluctance to move or exercise, a loss of stamina, or difficulty breathing, urinating, or defecating.

Any sort of lameness in an older dog, especially large breeds, should be investigated as a potential cancer case. Even minor or subtle symptoms, such as sleeping more than usual, refusing to play, or having less interest in social interaction, can be warning signs.

Types of cancers

There isn't room to describe every cancer that affects America's dogs, but the following alphabetical list describes some common diagnoses. Becoming familiar with the descriptions below will help you make sense of these and other canine cancers.

■ Bladder cancer

Bladder and ureteral cancers are most common in older dogs. While some studies have shown a higher risk in females and other studies found no gender differences, there may be a higher risk in neutered dogs of both sexes.

Bladder tumors have been associated with the use of flea and tick dips, flea and tick shampoos, or exposure to aromatic hydrocarbons such as paraaminobiphenyl, parantroliphenyl, and betanaphthylamine. The authors of one study suggest that it is not the active ingredients in flea and tick products that cause bladder cancer but rather "inert" or "carrier" ingredients such as benzene, toluene, xylene, and petroleum distillates, all of which are known carcinogens and which often make up 95 percent of the total product. They are used as solvents for the active ingredients.

A Purdue University study published in 2004 found that Scottish Terriers exposed to lawn chemicals have an increased incidence of bladder cancer. Scottish Terriers were chosen for the study because they develop bladder cancer 20 times more often than other breeds, but dogs of any breed can

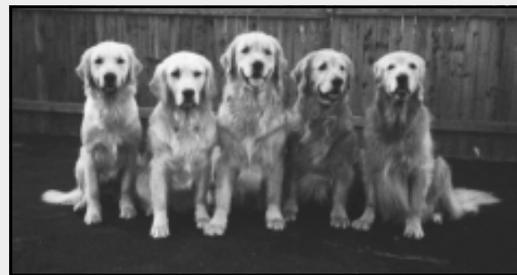
The Gene Factor

In 2004, the journal *Science* published a study in which researchers at the Fred Hutchinson Cancer Research Center examined the DNA of 414 dogs from 85 breeds. According to Elaine Ostrander, PhD, professor of genome sciences and zoology at the Center, the breeds were so genetically distinct that researchers could identify a dog's breed by looking at its DNA.

Dr. Ostrander had previously published an investigation of German Shepherd Dogs showing that a single gene was responsible for the breed's kidney cancer. She hopes that genetic studies will help researchers identify and cure cancer in pets and people.

The photo shown here is particularly appropriate as an illustration for any mention of the genetic inheritance of canine cancer. All five of these dogs are related to Shady, the dog who is fourth from the left; from left to right, they are Shady's niece, cousin, daughter, and sister. The dogs all belonged to New York dog trainer Nancy Strouss, and were *great* dogs, with titles galore and phenomenal dispositions. They were athletic, friendly, intelligent, everything you could ask for in a Golden Retriever. And each died of cancer.

From left to right: Juniper, who died at 9 years of hemangiosarcoma (subcutaneous); Shorty, at 12½ years, also of hemangiosarcoma (spleen); Georgie, at 10½ years, of hemangiosarcoma (oral); Shady, at 11 years, of mammary cancer and cancer of the central nervous system; and Kelly, at 9½ years, of hemangiosarcoma (spleen).



develop the disease.

Other bladder cancer risk factors include obesity and living in a marshy area.

■ Hemangiosarcoma

Originating in the endothelium (the lining of the spleen and blood vessels), hemangiosarcoma forms highly malignant tumors that develop throughout the body, especially in the spleen, liver, and heart.

German Shepherd Dogs, Golden Retrievers, Boxers, and English Setters are at higher than average risk, and the disease is most common in middle-aged or older dogs of medium to large size. In many cases, symptoms are noticed only after the disease has progressed to an advanced stage.

Initial symptoms include bleeding (especially nosebleeds), weakness, pale mucous membranes in the mouth and eyes, panting, and abdominal swelling. Death often occurs quickly, within one to four months of diagnosis. Many dogs with this disease die suddenly without manifesting clinical symptoms.

Spayed females are four times more likely to develop vascular tumors (cardiac hemangiosarcomas) than intact females; neutered males are also at higher risk of hemangiosarcoma than intact males.

■ Histiocytosis

The most common cancer found in Bernese Mountain Dogs, histiocytosis is rare in other breeds, although it can occur in Rottweilers, Golden Retrievers, and Flat-Coated Retrievers. Its symptoms include depression, fatigue, lethargy, loss of appetite, and weight loss. Malignant histiocytosis progresses rapidly and has usually metastasized by the time symptoms develop. Most patients die within two to four months of diagnosis.

Systemic histiocytosis creates skin abnormalities on the face and legs.

Most patients are middle-aged or older. Histiocytosis that spreads to the lungs can interfere with breathing, and anemia is another common symptom.

Histiocytomas are benign tumors that usually appear on the head of dogs under three years of age. They are not considered a health risk.

■ Leukemia

Leukemia, or chronic lymphocytic leukemia (CLL), usually affects older dogs and involves the rapid reproduction of mature lymphocytes throughout the body, including the bone marrow. Because elevated circulating lymphocyte counts are easily

identified in complete blood panel tests, CLL is often discovered when the blood is tested for other reasons.

Chronic lymphocytic leukemia tends to progress slowly and is often not treated until the circulating lymphocyte count increases to very high levels or the dog becomes lethargic, CLL's main symptom.

The condition can progress to a lymphoblastic crisis, also called lymphoblastic leukemia, which is a more aggressive form of the disease, comparable to advanced stage lymphosarcoma. With conventional treatment, most dogs with lymphoblastic leukemia survive for about a year.

■ Lung cancer

While unusual in dogs, lung cancer does occur, and the number of cases diagnosed each year appears to be increasing. However, this may be the result of improved diagnostic techniques rather than an increasing number of cases.

According to some research, short-nosed breeds exposed to secondhand smoke have twice as much risk of lung cancer than long-nosed breeds. (Conversely, long-nosed breeds living with smokers have an increased risk of *nasal* cancer.) Exposure to asbestos can increase the risk of cancer of the lining of the lungs (mesothelioma), and dogs with this type of cancer are likely to live with owners whose work or hobbies exposed them to asbestos.

■ Lymphosarcoma (Lymphoma)

The third most-common cancer in dogs, lymphosarcoma (also known as lymphoma) affects lymphocytes (a type of white blood cell) and tissue of the lymph nodes, spleen, liver, gastrointestinal tract, and bone marrow.

Although lymphosarcoma strikes dogs of all ages, most patients are over age five, with males and females at equal risk. Boxers, German Shepherd Dogs, Doberman Pinschers, Golden Retrievers, Scotties, West Highland White Terriers, and Pointers may be most vulnerable to this disease.

There are five classifications of lymphosarcoma, depending on the tumor's primary location.

The most common type involves external lymph nodes. It is also the most likely to be overlooked because many dogs have only mild symptoms such as fatigue or decreased appetite. More obvious symptoms include weight loss, vomiting, diarrhea, excessive thirst or urination, weakness, or difficulty breathing. In some cases, the only

signs are enlarged lymph nodes under the neck, behind the knees, or in front of the shoulders.

The other classifications are gastrointestinal (symptoms include vomiting, diarrhea, weight loss, and loss of appetite), mediastinal (affecting the chest, creating breathing problems and excessive thirst and urination), cutaneous (affecting the skin, which can be dry, flaky, scaly, irritated, and itchy), and bone marrow (producing anemia, infections, and bleeding).

Because lymphosarcoma spreads quickly, its diagnosis involves biopsies, aspiration of affected tissue, blood tests, urinalysis, and a search for tumors throughout the body using X-rays, sonograms, or other methods.

■ Mammary cancer

The most common cancer in female dogs is breast or mammary cancer. According to some studies, mammary tumors are more common in purebred dogs than in mixed-breed dogs of the same age, and they are far more common in dogs that are intact or were not spayed until after age two and a half years. Spaying offers maximum protection to dogs spayed before their first heat cycle and almost as much protection to those spayed before their second season. Obesity is a risk factor for mammary cancer, and the breasts most likely to be affected are those farthest from the head.

Approximately half of dogs with mammary gland tumors have more than one. These tumors tend to develop between the age 6 and 10 years.

Mammary tumors vary by size, texture, and condition. They may contain fluid or be ulcerated or inflamed. None of these symptoms reveals whether a tumor is malignant, and in dogs that have not been spayed, about half the tumors tested are benign.

Lymph node involvement increases the risk of cancer spreading to the lungs or other organs.

Survival rates are higher for dogs with small rather than large tumors and for dogs whose tumors have not metastasized.

■ Osteosarcoma

Highly aggressive and fast growing, osteosarcoma affects more than 8,000 American dogs every year and causes an estimated 85 percent of all canine bone tumors.

The illness has been diagnosed in six-month-old puppies, but it is most common

in older Great Danes, Golden Retrievers, German Shepherd Dogs, Great Pyrenees, Saint Bernards, Newfoundlands, Bernese Mountain Dogs, Irish Wolfhounds, Rottweilers, Labrador Retrievers, Doberman Pinschers, Weimaraners, Boxers, and other large-breed dogs. It is almost 500 times more likely to affect dogs weighing over 35 kilograms (about 80 pounds) than those weighing less than 10 kilograms (about 23 pounds), and males are at greater risk than females.

Any stress on weight-bearing legs is a risk factor, including previous fractures and infections. Bone tumors are most likely to affect the legs but can also occur in the skull, ribs, vertebrae, or pelvis.

Osteosarcoma is twice as common in spayed females and neutered males as in their intact counterparts.

After producing tumors that weaken bones, osteosarcoma spreads throughout the body. Its main symptoms – lameness, intermittent pain, leg swelling, and fractures at the tumor site – may be mistaken for arthritis or other chronic conditions until the disease is advanced. As pain increases, behavioral symptoms such as irritability, aggression, and a reluctance to exercise become more obvious.

Without treatment, most dogs with osteosarcoma die within two months of diagnosis, and only 20 percent survive for two years. Limb amputation is commonly performed to provide pain relief, but it does not usually cure the disease or prevent its metastasis. The most common cause of death is the spread of cancer to the lungs.

■ Prostate cancer

In humans, prostate cancer is a common but slow-growing cancer that affects older men. In dogs (the only other species to have significant amounts of prostate cancer) the disease is fast-growing, aggressive, and likely to spread to lymph nodes, lungs, and bones. In one study, one out of every 150 male dogs age eight and older was found to have prostate cancer. In most cases, prostate cancer is diagnosed in its advanced stages.

■ Skin cancer

The skin is the most prevalent tumor location in dogs, comprising an estimated 58 percent of all canine cancers. Most skin cancer tumors contain mast cells, squamous cells, or melanin-pigmented cells. These tumors are usually soft or solid raised, nodular masses. If malignant (many are benign),

treatment depends on their stage or grade.

Mast cell tumors, also called mastocytomas or mast cell sarcomas, are the most frequently diagnosed cancers in dogs. They are most common in middle-aged Boxers, Pugs, Rhodesian Ridgebacks, Boston Terriers, Schnauzers, Beagles, Labrador Retrievers, Dachshunds, Fox Terriers, English Bulldogs, Staffordshire Terriers, and mixed-breed dogs.

Squamous cell carcinomas are common in lightly pigmented dogs such as Beagles, Dalmatians, Whippets, and white English Bull Terriers. Nail bed squamous cell carcinomas tend to occur in black-coated large-breed dogs.

Melanomas are usually solitary black tumors. Melanomas of the mouth and nail bed are usually malignant.

■ Testicular cancer

Human males tend to develop only one type of testicular cancer (seminomas) while intact dogs can develop any of three different types (Sertoli cell tumors, seminomas, and interstitial cell tumors).

Canine risk factors include undescended testicles, which remain in the body cavity instead of migrating to the scrotum, as well as inguinal hernias. Neutering prevents the development of testicular cancer. Breeds associated with testicular tumors include Samoyeds, Cocker Spaniels, Beagles, and English Bulldogs.

Links between cancer and environmental toxins have long been suspected, and during the Vietnam War, working dogs exposed to parasitic infections, chemicals used to treat those infections, and agricultural chemicals such as herbicides developed increased levels of testicular cancer.

More on the way

In the coming months, we will explore conventional, complementary/ alternative, and support therapies for canine cancer. Next month, we'll discuss what works and what doesn't in conventional cancer treatment – and how much it costs. 🐾

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A Dictionary of Cancer

Aspirate – When used as a verb (and pronounced “as-per-ate”), it means to remove cells from a tumor with a syringe and needle. When used as a noun (and pronounced “as-per-it”), it refers to the cells removed in this manner.

Benign – The best news. A *benign* tumor does not invade and destroy tissue where it originates, and it does not spread to distant sites in the body. The term applies to any disorder or condition that does not produce harmful effects.

Biopsy – The surgical removal of tissue and its examination under a microscope.

Carcinoma – Any cancer that develops in the tissue lining external and internal organs of the body (epithelium). Carcinomas can occur in any tissue that contains epithelial cells. Related term: *carcinomatous*.

Cytology – The examination of cells collected by aspirating a tumor.

Fibrosarcoma – A malignant tumor of connective tissue. Fibrosarcomas, which can develop in soft tissue or bone, may affect any organ but are most common in the legs. This type of tumor is also called a *malignant fibrous histiocytoma*.

Grading – Low-grade tumors spread slowly, if at all; intermediate tumors spread at a moderate rate; and high-grade tumors are the most aggressive, fast-spreading, and difficult to treat.

Lymphocytes – White blood cells that occur in the lymph nodes, spleen, thymus gland, intestinal wall, and bone marrow.

Malignant – Life-threatening, producing harmful tumors whose cells invade and destroy tissue where they originate and spread to other sites in the body. Left untreated, malignant tumors cause progressive deterioration and death.

Mast cells – Large cells in respiratory and connective tissue that contain substances released when allergic reactions occur.

Metastasis – The spread of a tumor from its site of origin to distant parts of the body. Metastasize, this term's verb form, describes the spread.

Neoplasia – Literally “new growth,” this term applies to any growing tumor, malignant or benign.

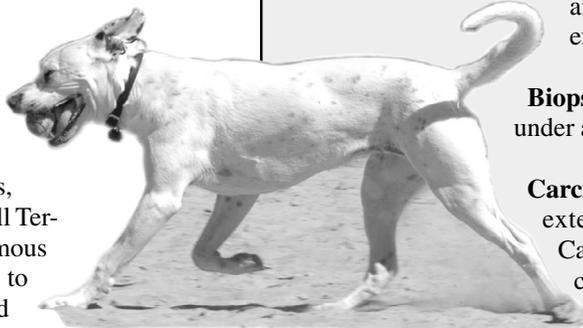
Prognosis – Expected outcome, prediction of an illness's progression.

Protocol – The treatment plan for a disease or condition, including surgery, radiation, chemotherapy, or other treatments.

Sepsis – An overwhelming systemic infection resulting from the inability of bone marrow to produce normal blood cells. It is often the cause of death in cancer patients.

Squamous cells – Cells that make up most of the skin's outer layer.

Staging – The evaluation of a tumor's magnitude and growth rate.



Say, What?

Learn to recognize and understand your dog's body language.

BY PAT MILLER

Play bows. Averted eyes. Tail wags. Flattened ears. Our dogs are not only masters at reading *our* body language, but also experts at *sending* messages with an incredibly expressive tool – their own bodies. If we humans were half as good at reading their signals as they are at reading ours, there would be a lot less miscommunication between our two species.

The fact is, most dog owners don't *see*, much less recognize the basic grammar of dog body language. That's why, when owners call me, asking for help with their dog following a bite, they almost always say, "The bite just happened out of the blue – there was *no* warning!" In most – if not all – cases, when I meet the dog, I see him giving *plenty* of indications that he's stressed and/or uncomfortable, signs that to a more knowledgeable canine observer are obvious warnings that a bite may emerge in that dog's near-future.

What's worse, many owners who would recognize the more overt warning signs –

growls and snaps, for example – have successfully suppressed those signs by previously punishing the dog when they occurred. So, in a way, they're right – the dog didn't hang up a flashing neon sign that he was about to bite, because he had already learned that it wasn't safe to do so.

Let me hear your body talk

The more you learn about your dogs' *subtle* body language communications, the better you'll be at reading them, so you can better manage his environment to prevent trouble. Is he tensing up, readying himself for a battle to defend himself against a perceived threat? Or is he playfully anticipating a romp with a canine pal he enjoys roughhousing with?

It's important that you not focus on just *one* piece of the message. The various parts of your dog's body work together to tell the complete story, and unless you read them all, you'll be missing out on important elements of the equation. You want to be especially aware of the ears, eyes, mouth, tail, and the dog's body posture as the important pieces of the whole puzzle.

Because canine communication is a con-

stant flow of information, it's sometimes difficult to pick out small signals until you've become an educated observer. You can start by studying photographs of dog body language, then watching videos that you can rewind and watch repeatedly, and finally honing your skills on live dogs. Dog parks, doggie daycare centers, and training class playgroups are ideal places to practice your observation skills.

In the next few months, we'll show you a few photos that exhibit some basic "expressions" in canine body language. But in this first installment, we'll give you an opportunity to "translate" the photos on these two pages, using the grammar key on the next page. Jot down your observations of the key body parts visible in the photos; next month, you can compare your answers to this "What are the dogs saying?" activity to our translation.

A note about the photos: Most were taken at dog parks. Some of the dogs are wearing collars, harnesses, or other training gear we don't like; more importantly, we don't like to see *any* extra gear on dogs who are playing in groups. It's too easy for dogs to get caught in each other's gear.

The Whole  Dog Journal™

WHAT YOU CAN DO . . .

- **Pay attention to your dog, especially when he is around other dogs and other people.**
- **Stay alert for fleeting expressions that differ from his usual demeanor.**
- **Trust what he "says." If he gives signs that he is uncomfortable, it's your cue to help him out. If he repeatedly flashes stress signals, he may be close to aggressing.**



Sometimes the moments that are caught by a still camera in the middle of a fluid canine "conversation" are comical. In other cases, the camera captures a scary expression of aggression that wasn't easily visible to the observer on the ground.

Canine Body Parts: Basic Grammar

Conventional wisdom has it wrong; a wagging tail does *not* always mean a happy dog. The following abridged Canine/English dictionary can help you become a skilled translator. Keep in mind that breed characteristics can foil our interpretation (and can even confuse other *dogs!*). Relaxed ears and tail on an Akita (a prick-eared dog, tail carried curled over his back) look very different from relaxed ears and tail for a Golden Retriever (a drop-eared dog, long, low tail).

Canine conversation is fluid and ongoing. A moment's freeze or hard look from one dog will mean, "I'm having fun, but *watch* it," and is often answered by an equally transitory appeasing expression from his play partner. "Sorry! I'll be more careful. Now let's play!"

That said, please note that if a dog's body language vacillates it can indicate ambivalence, which *may* precede a choice toward aggression.



Ears

- **Pinned back:** Submissive/appeasing, deference or fearful
- **Back and relaxed:** Calm, relaxed, friendly
- **Forward and relaxed:** Aware, friendly
- **Pricked forward:** Alert, excitement, arousal, assertive; could be play arousal or aggression arousal

Eyes

- **Averted, no eye contact:** Submissive/appeasing, deference or fearful; may be a subtle flick of the eyes, or may turn entire head away.
- **Squinting, or eyes closed:** Submissive/appeasing, happy greeting
- **Soft, direct eye contact:** Calm, relaxed, friendly
- **Eyes open wide:** Confident, assertive
- **Hard stare:** Alert, excitement, arousal; could be play arousal or aggression arousal

Mouth

- **Lips pulled back:** Submissive/appeasing or fearful (may also be lifted in "submissive grin" or "aggressive grin")
- **Licking lips, yawning:** Stressed, fearful (or tired!)
- **Lips relaxed:** Calm, relaxed, friendly
- **Lips puckered forward, may be lifted (snarl):** Assertive, threat

Tail

- **Tucked under:** Submissive/appeasing, deference or fearful
- **Low and still:** Calm, relaxed
- **Low to medium carriage, gently waving:** Relaxed, friendly
- **Low to medium carriage, fast wag:** Submissive or appeasing or happy, friendly
- **High carriage, still/vibrating, or fast wag:** Tension, arousal, excitement; can be play arousal or aggression arousal

Body posture

- **Behind vertical (leaning back), lowered; hackles may be raised:** Submissive/appeasing or fearful
- **Vertical (standing straight), full height:** Confident, relaxed
- **Ahead of vertical (leaning forward), standing tall; hackles may be raised:** Assertive, alert, excitement, arousal (possibly play arousal or aggressive arousal)
- **Shoulders lowered, hindquarters elevated:** A play bow is a clear invitation to play; dog sending a message that behavior that might otherwise look like aggression is intended in play.



Defeating Disease Differently

How well-informed owners pulled their dog through distemper.

BY SUSAN WEINSTEIN

When we decided not to vaccinate Caleb, our Bouvier des Flandres, against anything other than rabies, my friend Janice and I knew we ran a risk that he might develop a dreaded disease. We also knew that vaccination doesn't always protect against disease, and believed it sometimes causes illness. We felt the home-prepared BARF (bones and raw foods) diet we fed him would help his body fight off many health problems. Naturally, we hoped that Caleb would never come down with anything serious like canine distemper virus (CDV). But, when he was three years old, we had to face and overcome exactly that challenge.

Caleb's dramatic recovery illustrates the theory that a healthy, well-nourished dog can overcome even a serious disease like CDV – *if* treated in time by appropriate holistic modalities and devoted home nursing. If we prepare ourselves ahead of time for deadly canine viruses, it can spell

the difference between life and death – whether a dog is immunized or not.

The story of how we responded to Caleb's ailment *also* illuminates how difficult it can be at times to manage a nonconventional response to your dog's illness. Many dog owners are accustomed to simply bringing their dogs to their veterinarians, and taking all the vets' suggestions for treatment. This may be the best approach if an owner has no information about or experience with the dog's disease; you have to rely on experts you trust!

But in our experience, there are *greater* rewards for educating yourself before problems happen and working with healthcare experts to corroborate your research and decisions. We feel certain that Caleb would have died if treated with the conventional veterinary tactics for CDV. As I said before, we also felt the risks of vaccination against the disease were not worth the benefits.

Of course, there are risks to this approach as well. Only dog owners who are



Distemper has killed unknown millions of dogs. But thanks to the enlightened treatment he received when he contracted the virus, Caleb recovered fully, without any of the aftereffects that can plague some dogs who had conventional treatment.



WHAT YOU CAN DO . . .

- **If you choose to forego vaccinating your dog, educate yourself about the risks and signs of the diseases to which he might be exposed.**
- **Stay vigilant and alert to any signs of disease so you can pursue immediate and appropriate treatment.**
- **Find and establish a relationship with veterinarians – holistic and conventional – before you need them, so you can rely on their services when they are needed.**
- **Be prepared to provide intensive nursing and supportive follow-up care; this is key to any holistic healthcare plan.**

ready to accept full responsibility for making their own decisions should attempt a nonconventional response like ours.

Telling our distemper story, we hope, will demonstrate the potential risks and huge rewards of implementing a truly holistic healthcare plan for your dog.

Be alert and observant

Janice and I observed the earliest signs of what would prove to be Caleb's CDV infection about a week before we planned to drive 1,500 miles from rural Ontario to visit a friend in Iowa.

To begin with, Caleb went off his food. Then he threw up and had diarrhea. His first vomit was yellowish and foamy, with what looked like saliva in it. The next few times it contained lots of clear fluid, again with

foam on top. His diarrhea was even more unusual. It spurted out – projectile diarrhea. It, too, was yellow, and had a powerful, unusual odor.

At first, we speculated that he had eaten something rotten in our cedar swamp, where he loves to play and explore. When the problem persisted for a day, we discussed it with our veterinarian, Dr. Susan Gambling, who was not unduly alarmed, but advised us to keep watching him and keep her informed. As so often seems to be the case after a call or visit to a vet, the following morning, Caleb started eating again and seemed to have gotten over whatever it was.

Later, I read that the first stage of CDV can be hard to tell from other upsets. Not only that, but it tends to clear up temporarily, making it appear as if the dog is all right.

Four days later, on Monday, we loaded him into our van and left for our vacation. During the two-day drive and the rest of the week, Caleb ate normally. He showed an interest in my friend's garden, her small Terrier-mix, and her two black cats. But I remained uneasy.

Connect the dots

As the week wore on, Caleb became strangely quiet. Then, on Saturday morning, about 10 days after his original bout of vomiting and diarrhea, his beautiful eyes stayed half shut and oozed green discharge.

Having used homeopathy since 1982, I thought it could help Caleb now. The right remedy must closely match the efforts of the individual's immune system as revealed by her specific symptoms, regardless of which organisms play into her illness. I thought that the remedy *pulsatilla* suited Caleb's discharge and emotional demeanor reasonably well, but the nearest source for the remedy was 50 miles away. We'd have to get it Monday, on our way home.

Then Caleb stopped eating again. By Sunday, he strained to defecate and his energy diminished. We were anxious to get home to Dr. Gambling and the holistic practitioners we sometimes consulted, including Paul McCutcheon, DVM, of East York Animal Clinic in Toronto. At this point, one might argue that we should have taken Caleb straight to the nearest vet. But in this case, as would become clear, the fact that we pushed on until we could reach *holistic* help almost undoubtedly saved Caleb's life.

We hit the road for home first thing Monday. Caleb developed a dry, croupy cough and his nose started dripping. The

word "distemper" kept coming into my mind as if someone was repeating it to me.

In Iowa City, I called a local vet, and asked whether he thought we should risk the two-day trip home or come for emergency assistance right away. I described Caleb's symptoms. After he ruled out Parvo and Lyme disease, I asked if this could be distemper. He thought probably not, adding that dogs with distemper generally produce a profuse amount of thick, greenish or yellow discharge from their noses – "Like you've never seen before," he described. "You couldn't miss it." He thought we could try to get home to our own vet.

As it turned out, the vet's remark about identifying CDV by quantity and quality of nasal discharge would become one of two coincidences that contributed to Caleb's diagnosis and recovery.

The second was that since Caleb was a pup, when reading up on canine diseases something drew me to study everything I could find on distemper in particular. Contrary to mainstream belief, holistic pet care books report hundreds of cures. I did not know then that this curious obsession would someday help to save my dog's life.

Respond to symptoms

On the road again, mucous started rattling in Caleb's lungs when he coughed. Green goo still trickled from his eyes, their whites moist and reddish. His breath began to exhibit an odd odor, which would become very strong over the next few days. Having no professional advisor, since *pulsatilla* still matched some of his symptoms, we bought and gave him some immediately. The potency available, C30, was a reasonable middle strength to try without a homeopath's guidance.

At our motel that night, Caleb's cough got worse and he couldn't get comfortable. We gave him more *pulsatilla*. We phoned Dr. Gambling at midnight, when she was scheduled to be on call. What alarmed her most was his restlessness. She said if he didn't settle down within a couple of hours to go to the nearest emergency facility. I found a 24-hour rural vet nearby, and left the yellow pages open with the number handy.

But when we heard thunder, we understood Caleb's uneasiness. Like many dogs, Caleb becomes agitated hours before an electrical storm. We gave him rock rose, a flower essence remedy, after which he slept quietly. That the storm had caused his anxiety showed us that even when a dog is

desperately ill, some symptoms may have unrelated causes.

On Tuesday morning, Caleb's eyes cleared up completely, as did his cough – a typical positive response to a well-chosen homeopathic remedy. We'd realize later that early homeopathic support may have helped prevent CDV complications of pneumonia, which dogs don't survive as well as people do, and conjunctivitis. Caleb improved for awhile, but had diarrhea, with straining, later that afternoon. We offered him chicken broth, but he would not drink it.

That night, he threw up thin yellow bile with flecks of bloody mucous. His breath and body smelled caustic and sour, with an almost salty quality. This odor is characteristic of CDV, but I needed my books to remind me of that, and they were at home, still another 350 miles away.

At one point that evening, Caleb rolled onto his back, and we saw that his belly was red and irritated. This would become another clue. Closely related to human red measles, CDV often causes an abdominal rash. But we didn't yet identify Caleb's rash since he frequently gets a pink underside when bothered by allergies or fleas. The definitive red spots wouldn't appear for two more days.

Caleb had diarrhea again on Wednesday morning, although there wasn't much left in him. Immediately afterward, he seemed weak and wanted to be in the open air.

I phoned our veterinary clinic in Cobourg, Ontario, and made an appointment for 4 p.m. We started the final six hour drive. In spite of our reassuring manner with Caleb, we were shaken and relieved to be nearing home.

Dr. Gambling was off duty, so her associate saw Caleb. He had a fever of 103.6°F. Diarrhea had made his anus sore, his nose dripped, and he was subdued. His urine was dark and greenish; the clinic found albumin in it. But protein breakdown is typical when someone hasn't eaten for days, so that didn't tell us much.

It didn't occur to us then to mention that we hadn't inoculated Caleb against the usual infections. Dr. Gambling would have known, but she wasn't there. Maybe we assumed her associates would be aware of Caleb's history, or perhaps we were too stressed to think clearly. But the missed moment shows that even the experts won't think of everything! The idea that responsible owners might not have vaccinated may not cross the mind of a vet unfamiliar with holistic thinking. And, these days, due in

large part to mass immunization, vets may not see infections like distemper for years. Newer ones may know it only from a textbook.

The vet took blood to send to a lab to look for various possibilities, but did not request a test for CDV. However, even if she had, waiting for a diagnosis would have wasted precious time. CDV advances aggressively, ravaging tissues until it can kill a dog or permanently disrupt its neurological system. The sooner caretakers take action, the better the dog's chances; not only of survival, but of a good recovery.

Feeling a sense of urgency, we took Caleb home. There, I reread my holistic books about canine viruses, their symptoms, and treatments. By the next day, I'd be glad I'd refreshed myself about what information I had and how to find it fast.

Emotional affects

During the night, Caleb's breathing became so congested that every inhalation sounded like snoring. At 5 a.m. Thursday, Caleb asked to go out into the darkness of our fenced property. We decided to trust his instinct about what he needed. Maybe the cool autumn air would ease his breathing.

Then, in order to support him best, Janice and I faced our own fears. We felt powerless and scared. But we didn't want our need to make him well to compromise our ability to help him. Nor did we want him to feel that he must pull through for our sake. And we certainly didn't want him to redirect his energy into being anxious because we were upset, as dogs will do.

Recognizing this, we resolved to work toward the best possible outcome while acknowledging that it was not ultimately in our hands. If it was his will to survive, we would assist him. If not, we would try to accept that with grace.

At 7 a.m., I found Caleb down near the pond. He wobbled up to meet me and we sat down together on the grass. Then, something astonishing happened. He nodded his head toward me companionably, and a spoonful of creamy yellow liquid gushed out and covered his nose.

The Iowa vet's words came back to me. I knew right away that Caleb had distemper. Instead of panic, I felt relief. Now, we knew what was wrong and that something could be done. No need to waste any more time not acting.

Dr. Gambling was on duty that morning. Caleb's nostrils oozed steadily. His fever was 104°F, and his belly had the



A photo of Caleb playing in the snow, taken in 2002, shows his clear, healthy eyes and spirit.

measles-like spots. All these signs plus his breath and body odor now clearly indicated stage two of an acute distemper infection, as can hardening of the pads of the feet, which he never developed.

Dr. Gambling took another blood sample, this time for the CDV test. Janice and I said we would take Caleb home and treat him ourselves with natural remedies, and Dr. Gambling got right behind us, acknowledging that such methods would offer Caleb's best, if not only, hope. "In veterinary school," she said, "they teach us that when it's distemper, dogs just . . ." She made the thumbs-down sign to finish her sentence, and added that while conventional medicine can *treat* CDV, it cannot cure it.

Mainstream response

Medical intervention for CDV generally consists of hospitalizing the dog and intravenously giving fluids, antibiotics, and possibly other drugs or nutrients. This is meant to prevent dehydration, complications like pneumonia, and keep up the dog's strength. The virus then runs its course.

If the dog survives, she often goes into stage three of the disease, involving encephalitis of the brain or spinal cord. The resulting neurological damage leaves chronic symptoms such as chorea (uncontrollable twitching or jerking) or seizures, during which the dog may cry out. Some vets and dog lovers believe it kinder to put

CDV-infected dogs down rather than risk the devastation of stage three.

However, other vets caution against putting CDV dogs on IV fluids. Holistic veterinarian and author Richard Pitcairn, for example, writes that dogs given antibiotics, fluids, and other drugs are more likely to develop stage three than those treated with natural methods. Both Dr. Pitcairn and herbalist Juliette de Bairacli Levy speculate that such measures impede the dog's ability to throw off the virus. De Bairacli Levy believes that feverish dogs must fast to divert energy from their digestive processes to fight disease.

And Dr. McCutcheon (the holistic veterinarian we often consulted via long-distance call) emphasizes that both being kept in hospital away from her family and enduring invasive procedures significantly increases the stress of a dog who is already terribly ill.

Holistic possibilities

As soon as we got Caleb comfortably settled in our house, we turned to our home library and developed a treatment plan from several different sources. The following are the things we read, and how we applied them:

■ Vitamin C injections

From *How to Have a Healthier Dog*, by Wendell O. Belfield, DVM, and Martin Zucker, we learned how Dr. Belfield helped hundreds of dogs with CDV recover by intravenously injecting them with therapeutic doses of vitamin C twice a day for five days. Dr. Belfield recommends the sodium ascorbate form of vitamin C for dogs.

However, sodium ascorbate can be hard to find. We had some in the form of a dietary supplement, but it was not sterile for injections. Dr. Gambling phoned Dr. Belfield, who agreed to ship her some and instruct her how to use it, but delivery from his California clinic would take until Monday to get to us – four dangerously long days away. Instead, we chose to give Caleb vitamin C orally.

■ Fasting and medicinal herbs

European herbalist Juliette de Bairacli Levy claims she oversaw at least a thousand cures of CDV with fewer than a dozen cases sustaining neurological damage. (This is described in her book, *The Complete Herbal Handbook for the Dog and Cat*.) She bases her approach around fasting, and warns that offering food while fever remains above 103°F predisposes a dog toward neurologi-

cal damage.

In her book, de Bairacli Levy also describes giving dogs with CDV herbal antiseptic tablets or grated raw garlic and honey two to three times per day; honey-water to supply strength; fresh air; short walks for movement of limbs; and a mixture of tree barks to soothe the digestive tract. She also uses an infusion of rosemary, elder flowers, chickweed, speedwell, and/or balm to swab the dog's eyes and nose, and applies pure almond oil to sore nostrils or eyes. She believes that early treatment will prevent stage three altogether, and advises that owners carefully reintroduce food to a dog after she has been fasting.

Caleb was fasting anyway; we'd withhold food until his temperature was normal for a day. In the meantime, we offered him wild honey water, gave him balls of garlic

and honey mash, and bathed his nose and back end with rosemary infusion. As he recovered, we gave him slippery elm powder for his digestive tract. When the time was right, we gave him small amounts of mashed veggies first, easing him gradually back onto meats and his regular supplements.

■ **Classical homeopathy**

In his classic book, *Dr. Pitcairn's Complete Guide to Natural Health for Dogs & Cats*, now in its third edition, Richard Pitcairn, DVM, lists six of many possible homeopathic remedies for different stages and symptoms of CDV, advising using a choice of only one. He also suggests dosages of vitamin C as an adjunct.

Having used homeopathy for more than 16 years, I knew it was effective and the remedies were easy to obtain. In this life-

and-death situation, we'd want an experienced homeopath to choose the right remedy for Caleb, and we knew Dr. McCutcheon's clinic would consult long-distance. So, homeopathy would be the hub of our plan. Pitcairn also inspired the dosage of vitamin C we gave Caleb orally: 3,000 mg three times per day.

■ **Acupuncture**

In her book, *Keep Your Pet Healthy the Natural Way*, Pat Lazarus gathered testimonials from holistic vets who use either vitamin C injections or acupuncture to cure or control effects of stage three of CDV, such as seizures and chorea. Some vets inject vitamin C or B12 into acupuncture points. As it turned out, Caleb did not develop stage three complications. If he had, we would have researched these options further.

Principles for Holistic Management of Treatment

Throughout Caleb's recovery, we followed the basic principles, below, and recommend them to any dog owner who is helping their dog recover from a serious disease:

- Trust your intuition.
- Follow a nursing schedule to keep everything coordinated.
- For the first few days, keep someone available to observe the dog full time and give remedies as required.
- Watch for physical improvement, better emotional outlook, and returning appetite.
- Be ready for a backslide with another dose of homeopathic and/or other remedies.
- Establish a relationship with a trusted practitioner *before* you need one. Make sure he or she is available to answer your questions as they arise.
- When it's time to reintroduce food, follow appropriate guide lines about bringing a dog out of a fast. Keep food clean and simple. Illness can leave the digestion sensitive for awhile.

BE PREPARED

Being prepared to battle a serious illness, even at an inconvenient time like the middle of a vacation, is critical to your success. We suggest the following:

- Learn how to recognize early signs of severe illnesses.
- Feed your dog a clean, natural diet to keep her as healthy and toxin-free as possible. Although it can't guarantee immunity, if she does get sick, it'll help her beat what ails her.

- Compile and keep handy the phone numbers and office hours of experienced holistic vets so you won't have to start that search during a crisis.
- When traveling with your dog, take a list of holistic veterinarians who live along your route.
- Build a home library of holistic pet care books and know their contents, so if your dog gets sick you can look up needed info fast. Take at least one of these books when you travel with your dog, too.
- Research where to get hard-to-find remedies for dogs.
- Know your dog well enough to notice subtle changes in her behavior, energy, or mood. These can indicate the start of an illness or a change in its direction, signaling the need to take action.
- If you must nurse your dog through acute infection, write down your regime so you won't have to depend on memory when you are under stress. Include a column to check off completed tasks.
- If suspicious symptoms prompt you to have your dog examined, don't hesitate to remind your vet if you haven't immunized against specific diseases. Also, if you think your dog may have a particular virus, ask your vet to check it out.
- While seeing your dog through a significant illness, stay as well-balanced as you can. Your dog is attuned to you and is affected by your feelings, attitudes, and the nature of your thoughts.

Applying the treatment plan

Right after Dr. Gambling confirmed Caleb's clinical signs of CDV, we phoned Lisa Formosa, DSHomMed, the homeopath who works with Dr. McCutcheon at East York Animal Clinic in Toronto. Formosa took details of Caleb's physical symptoms, then asked about his emotions and energy level. Was he depressed and flat? Did he want to be left alone? Caleb wasn't like that. He watched us and acknowledged a greeting when we approached. Although he was physically weak, his energy wasn't completely diminished.

Based on these and many other factors, Formosa recommended the remedy distemperinum, which is made from the discharge of dogs already sick with the distemper virus. Formosa said if Caleb had been deeply depressed and stage two even more established, she would have chosen homeopathic goldenseal, instead.

I was surprised. Dr. Pitcairn lists both remedies as candidates; yet even as an experienced lay person, I would have chosen goldenseal. Formosa's explanation about dosage was new to me, too. She said Caleb's relatively "up" energy level indicated that we start with 30C, because we didn't want to "overwhelm" him with the higher intensity of 200C. If the lower potency had no effect, then she would recommend trying 200C. This shows why it's wise, when possible, to get professional advice for serious problems!

We immediately contacted homeopathic pharmacies around the region, and ran into another challenge. They hadn't even heard of the remedy distemperinum! Fortunately, the East York Animal Clinic kept some in stock. As Caleb had someone responsible at home to watch over him, I jumped in the car and drove the 80 miles to Toronto.

When I got back, I found Caleb resting on his loveseat on the porch and gave him his first dose. It was 6:30 p.m. By 7 p.m., his temperature had dropped to 102.4°F. Then, he howled like usual at a train whistling through the crossing a half mile away! We put chicken broth near him.

Formosa advised us that in classical homeopathy, caretakers administer a dose, then observe. As long as you see improvement, don't dose again. You repeat the dose when improvement seems to stop. She said Caleb's nasal discharge might first get worse, and reminded us that homeopathic theory views discharge as a good sign. Then she concluded calmly, "You should be all right."

Janice and I worked out a schedule specifying what, when, and how much to give of every substance, and posted it on the kitchen cupboard. The final column gave space to check off each task when done. Our intention was to make sure we didn't miss a beat, especially if we became too anxious to think straight. I started keeping a log on everything that happened.

We dosed Caleb twice more that night.

Caleb's recovery

Caleb came out of his illness as straight as an arrow.

On the second day of treatment, Caleb's temperature was around 102.4°F. His nasal discharge loosened and flowed easily. On a short walk, he leaped a log (!) and later coughed to clear his lungs. He watched our kitchen activities keenly, and drank a half cup of broth. By mid-afternoon, he rested in his regular lookout spots in the yard, cruised the kitchen counters looking for food, and chased our cat away from his broth.

Once, when looking into his eyes, I sensed his energy drop and gave more distemperinum immediately. He came on strong again and got *very* hungry. We gave him a few tiny homemade biscuits, as a goodwill gesture. On my bed, he slept happily on his back!

On the third day of treatment, Caleb's temperature averaged 101.8°. He took some broth with vitamin C and slippery elm in it, plus the honey-garlic mixture. He made a tiny bit of healthy poop. We dosed him again. His nasal discharge was once again clear and colorless.

At one point that day, Caleb caught my eye and placed his foot on the lid of his biscuit tub. When I refused to give him a biscuit, he ran off with my plastic clog. I gave him one small biscuit, and later, some mashed cooked carrot.

We could *feel* that he was going to be all right.

By day four, Caleb breathed silently through his nose and his rash had faded. As his temperature averaged 101.2°F, over the day we provided cooked grains, a few nuts, baked winter squash with kefir and parsley,

another carrot, and grated raw cabbage. (Note: We have long since omitted grain from Caleb's diet.) He wanted even more.

Things just kept getting better. Caleb's former sweet breath started returning, and on day five, with his temperature at 100.2°, we offered him his first small portion of raw meat. By the eighth day, all the symptoms of CDV had gone and he was back on his full diet.

To rebuild his health, we added vitamin B complex to his diet, plus oat tincture several weeks later. We kept these up for months, as it takes a long time to rebuild a dog's strength after CDV. Finally, we reintroduced his daily supplements slowly as his ravaged digestive system became less sensitive.

When conventionally treated dogs survive CDV, neurological damage can show up weeks or even months later. Dr. Gambling told us that after three symptom-free months, we could announce Caleb's recovery to the world. It's now been seven years and counting.

Dr. Gambling also suggested eventually immunizing Caleb against CDV, since her in-office veterinary reference text says sur-

vivors maintain natural immunity for, at most, six months. Instead, we agreed to check his titers periodically. A vaccinated dog's CDV antibody count is normally below 200. The minimum score thought to sustain immunity is 24; after vaccination, it averages 36-48. Caleb's never-vaccinated titer, more than six years later, is 768.

Today, at 10, Caleb glows with better general health than most dogs his age. He's a mischievous, shining, energetic testament to why we should feed dogs a natural diet and be well prepared be-

forehand lest a nasty virus tries to gain a foothold. 🐾

Susan Weinstein is a freelance writer with a strong interest in animals and holistic healthcare. She is now working on a book about pets and stress with Paul McCutcheon, DVM. Weinstein and Caleb live with Janice Newson and Farida the Monster Cat in Grafton, Ontario.



At 10, Caleb is a shining example of the powers of a natural diet, holistic healthcare, and attentive, educated nursing by devoted owners.

Skin Secrets

Healthy skin is much more than just skin that doesn't itch.

BY RANDY KIDD, DVM, PHD

When the dog's skin is healthy, we don't give it a second thought. But when it is out of whack – greasy, itchy, smelly, flaky, bumpy, or raw – it becomes the center of attention for our dogs, and us, too. There is no more miserable dog than one with a serious skin problem.

The skin is the epithelial and connective tissue covering of the body. Skin is also referred to as the “integument,” a term meaning “a covering or investment.” *Cutaneous* is also used to describe the skin.

An animal's skin is its largest organ of the body, and it is properly thought of as a living, breathing organ system with a multitude of functions, specific nutrient needs, and intimate interconnections with other organ systems of the body. Of particular interest to health and healing are the functions of the skin that involve inner-body protective mechanisms, whole-body immunology, and nervous functions that affect sensation.

The surface of the skin is a critical interface between the highly controlled internal tissues and the external environment. It permits the maintenance of bodily homeostasis, and it is a primary organ

system for creating and maintaining whole-body health.

Anatomy and physiology

Skin is composed of two integrated cell layers, the epidermis and dermis. In total, the skin acts as a semipermeable protective layer covering the entire body.

The **epidermis** is the nonvascular, outermost layer of the skin and is composed of several cell layers. It is the tough part of the skin, and it has the ability to thicken with use. The epidermis varies in thickness, depending on the area of the body, but over most of the body it is about 0.1 mm thick. A dog's foot pads are greatly thickened and toughened epidermis.

The **dermis** is the part of the skin that lies beneath the epidermis; it is composed mostly of connective tissue along with blood vessels, nerves, and lymphatic ducts.

In the skin two particular cell types, keratinocytes and Langerhans cells, are of special importance for holistic health. Both are prime contributors to the health and healing of the skin.

Keratinocytes are stratified (in layers) squamous (scaly or platelike) epithelial cells, which are the primary cells found in the skin and mucosa, including oral esophageal, corneal, conjunctival, and genital epithelium. Ninety-five percent of the epidermal cells are keratinocytes. Keratin is an insoluble protein synthesized by keratinocytes. Keratin adds toughness to skin, hair, and nails; it the substance that forms a barrier between the animal and the environment.

Keratinocytes undergo characteristic changes as they move upward/outward from the basal layers of the epidermis (the deepest layer of keratinocytes where the stem cells reside) to the outer cornified (hardened) layers of the skin. The normal turnover time for keratinocytes is about 30 to 60 days, but this time may vary with disease or patterns of increased use.

Langerhans cells form the “nerve cen-



This dog has beautiful skin, but many Shar-Peis do not. They, like a few other breeds (and dogs in some lines in some breeds), are genetically predisposed to skin problems.

ter” of the skin; they are migrating dendritic cells (from the Greek, *dendron*, for tree) found in the epidermis. These are cells of nervous tissue origin that participate in the cutaneous immune response. They have the ability to migrate from the skin to lymph nodes where they can transfer antigenic information being received by the skin throughout the entire body. Their communicative ability is greatly enhanced by their extensive “dendrites” – branching, threadlike extensions (like the limbs of a tree) from the cell proper.

Melanocytes are cells found in both the epidermis and dermis; they contain pigmented granules of melanin. Melanin granules are all the same color (reddish-brown); it is the variation in the amount and location of melanin that causes the different colors of skin and fur.

The **subcutaneous** layer lies below the

The Whole  Dog Journal™

WHAT YOU CAN DO . . .

- **If your dog has healthy skin, try not to mess it up! If a problem occurs, try to determine if it was caused by something you introduced: a new shampoo, a change in diet, a flea remedy.**
- **When dealing with a dog's skin problems, start with the most complete veterinary examination and evaluation available.**

epidermis and dermis. It is composed mostly of fat, and it forms a loose attachment between the dermis and underlying muscle tissue. Its loose attachment allows for considerable movement of the dog's skin over its body.

Structures that originate from the skin include hair or fur, glands, and nails.

Most mammals have both oil (sebaceous) and sweat (sudoriferous) glands located throughout the skin, but the dog's (and cat's) **sweat glands** are found only on the pads of their feet. Panting (along with increased salivation) are the primary ways a dog cools down.

Sebaceous or oil glands are usually associated with a hair follicle, and they are widely distributed throughout the skin of most mammals. Secretory cells of the sebaceous glands produce sebum, a substance that is mostly lipid (fatty material).

The functions of the sebaceous glands include:

- Lubrication and production of a protective, oily layer for the hair and skin.

- Inhibition of bacterial growth.

- Synthesizing vitamin D. (A precursor to vitamin D, dehydrocholesterol, is formed in sebaceous glands. When dehydrocholesterol is irradiated by sunlight to its active form, vitamin D, it is absorbed by the body.)

- Secretion of sebum. (Sebum production is related to hormonal levels, generally being highest around the time of puberty.)

Apocrine glands are considered by some physiologists to be a second type of sudoriferous gland. Apocrine glands are typically located in the anal and genital regions, and in some species they secrete a type of pheromone or sexual attractant. Anal glands in dogs and cats are examples of apocrine glands.

Claws are formed from keratinocytes located in the dermis that surrounds the periosteum (bone covering) of the distal toe. Claws/nails of dogs (and cats) are supplied with blood vessels and nerves.

A closer look at skin diseases

Entire tomes have been written on the subject of canine skin diseases and their great variety of treatment approaches. Here, we will only simplify an approach to identifying and treating skin problems from the holistic perspective.

For purposes of this article, we will take the organ system of skin in its totality, and make the assumption that if we can keep its two primary cells healthy – the keratinocytes and Langerhans cells – we will be well on the road to overall health of the dog's skin.

Remember that keratinocytes change in both morphology (appearance) and function as they progress in maturity from the inner, basal layers of the epithelium to its outermost, dead-cell covering. Recent studies have indicated that this progressively changing function can be greatly affected (positively or negatively) as it is occurring. In other words, keratinocytes may be “uploaded” toward health or “downloaded” toward disease, depending on what stimulus is being applied – either from within or from the surrounding environment.

A prime example of a “downloading” (disease-producing) stimulus occurs with the condition known as atopy (discussed in more detail below). Any oxidative stress, including ultraviolet radiation, chemical oxidants, and the presence of microorganisms may incite the keratinocytes' stem cells to produce mature cells more susceptible to disease.

One example of a “downloading” stimulus that has been extensively studied in humans is exposure to ultraviolet (UV) light. Excess exposure to UV rays is one of the primary contributing factors in producing skin tumors. Scientists have discovered that the “stress” of ultraviolet light initiates a change in gene expression of the stem cell keratinocytes, speeding the process of cell aging, and ultimately leading to the production of a population of mature cells that are more prone to tumor development.

Note that dogs, when compared to humans, have a built-in sunscreen: their hair coat. The UV-induced downloading of the keratinocytes may thus not be as big a problem in dogs, but the science behind it is interesting nonetheless. Also interesting: Of the few species studied, each has its own cellular mechanism for coping with sunlight. Some species use one pathway to create altered keratinocytes; others use an entirely different pathway.

A good example of “uploading” the keratinocytes occurs in the body's natural response to cuts and scrapes. In wound healing, activated keratinocytes begin to produce keratin proteins distinct from the keratins of healthy epidermis, and the keratinocytes themselves become hyperproliferative and migratory.

There are many substances that can up-

load keratinocytes. Any of the dietary antioxidants (for example, vitamins A, C, and E and Omega-3 fatty acids) likely have a salubrious effect. Judging from its ability to rapidly regenerate epidermal cells, the topical use of the herb calendula (*Calendula officinalis*), may also be directly beneficial to skin cells.

Vitamin C has been well documented as a skin helper. In addition to its antioxidative capacity, vitamin C participates in several biological roles. It helps protect the skin against sunlight, and its primary role in collagen synthesis is crucial for skin regeneration and wound repair. Vitamin C also modulates keratinocyte and lymphocyte differentiation, helping to produce healthier mature skin and cells of the immune system.

Further, vitamin C has at least two beneficial effects for cancer prevention. First, it is important in the inner-cell mechanism that helps damaged cells die off rather than grow into tumor cells. Second, it seems to help the effects of at least some chemotherapeutic agents.

Finally, we know that vitamin C is accumulated in healthy skin cells, apparently waiting there for any increased need. It is found in lower amounts in cells of older animals, a possible reason for increased cell aging in the elderly.

Veterinarians have been taught that dogs do not need dietary vitamin C because they can produce it themselves. However, most holistic veterinarians think that there are plenty of occasions when the “normal” amount of produced vitamin C isn't enough for the need – for example, for skin allergies that require enhanced antioxidant and healing activities. My own recommendation is to routinely add maintenance levels of vitamin C to the dog's diet, and to increase these amounts to therapeutic levels whenever there is a need. Check with your holistic vet for dosages.

Factors contributing to skin health and disease

Following is a list of some of the general factors that can adversely affect the health of the skin, along with some very basic ideas for how we can enhance the dog's individual ability to maintain healthy skin.

- **Genetic.** Studies indicate that there are certain breeds of dogs and particular genetic lines within breeds that are especially prone to skin diseases.

For example, there are many breeds that

have been reported to have an increased susceptibility to atopy. The Shar-Pei, for example, has a high relative risk factor for generalized demodicosis (mange), atopy, and hypothyroidism, and there are certain lines of Cocker Spaniels that exhibit a higher incidence of seborrhea.

When we have looked further into the cause of this increased susceptibility, it often turns out that the breed has a general population of keratinocytes that are genetically programmed to download (proceed into disease mode) rather than upload toward healthy mature cells.

Further, it appears that some breeds or individual lines within breeds seem to have a genetic propensity for a poorly functional immune system.

The best advice, of course, is to avoid breeds and genetic lines that are more susceptible to skin problems, but this is obviously not always possible (hindsight is 20/20, but foresight is not always available, unless you know the genetic history of the individual). Susceptible individuals may need to be on a lifelong regime of multidimensional skin enhancers, including nutrition, immune-boosters, topical skin-care products, etc.

■ **Immune system.** As it pertains to the skin, the immune system is a two-lane highway. The animal's innate immune ability affects the health of the skin, and the immune system located within the skin (Langerhans cells) needs to be healthy for it to transfer an accurate immune response from the externally received antigenic stimuli to the inner reserves of the immune system.

■ **Nutrition** is the key to good skin health. The problem is that, for the key to be effective, it must fit the lock (the individual). In the old days there were many locks that could be opened with one general skeleton key, and likewise there is a skeleton program of good nutrition that will help many animals (see "Diet Tips for Promoting Skin Health," next page). For those critters that are prone to skin disease, you may need to have a holistic practitioner devise a nutritional program that specifically fits your individual.

■ **Hygiene.** As with all holistic approaches, balance is the key to managing your dog's hygiene; too much or too little is not healthy.

Trying to scrub away all the dirt and



Deep skin folds require extra care to keep them dry and clean.

debris that our dogs collect in their normal course of work and play may be counterproductive. Too much cleansing can be drying to the skin. Dry skin is physically irritating, which may cause the dog to dig and scratch excessively. Additionally, we know that the skin's oil glands produce

a substance that is antibacterial; so excess cleaning actually removes the antibacterial barrier.

Furthermore, there is considerable recent evidence to indicate that a certain amount of "dirt" is good for the immune system. Exposure to dirt, low concentrations of locally important bacteria and bugs, local plant pollens, and household dust are all vital for developing a healthy immune system and for stimulating an appropriate immune response.

Finally, many shampoos or soaps contain substances that are irritating to the individual, again stimulating the itch/scratch cycle that ultimately damages the skin. Also, soaps seem to be individually tolerated or rejected; what works fine for most dogs may stimulate extreme itching in a rare individual.

Try a soap initially on a small area of your dog and observe the results. When you've found a shampoo that seems to work for your dog, use it only often enough that it keeps your dog clean and at the same time allows her normal skin oils to be present. Healthy skin should be dry but not flaky, pliable, and possessing a slightly oily feel, and the hair coat should have lustrous sheen.

To maintain this look and feel, some dogs need a bath every week or so; others will do better if the interval between baths is a month or more. An animal suffering from ongoing skin disease may require special care, with increased bathings that may also need to be medicated (herbal shampoos are often very helpful) or nutritionally enhanced shampoos (many shampoos have added vitamins or antioxidants that can be beneficial).

Note: Shampoos that contain oat extracts

seem to be the most universally soothing, but sometimes they contain additives that are irritating – scents, preservatives, and other things that don't need to be included. So, even oat-based products should be spot-tested first.

■ **Bugs.** We all know that fleas, ticks, mites, and lice can cause dastardly consequences, and so we know that we need to keep their numbers to a minimum. Products abound: spot-ons, collars, and oral drugs that circulate bug-unfriendly toxins to fight the invaders from within; sprays and powders to attack them from without; shampoos to stop them in their tracks; and dips to keep them away for weeks. While the negative impact that bugs can have on the dog's skin health shouldn't be minimized, I often think we've overdone it more than just a bit.

It is clear, for example, that bug *killers* are *toxins* and that they also affect the animal we apply them to – reason enough to give us pause before we wage all-out war against all vermin, real and imagined. We also know that the anti-bug drugs can produce an allergic response in the animal, creating a skin irritation that is exactly like the one we were trying to prevent by keeping the bugs away. Finally, toxic chemicals are not species specific; when we kill the bad guys, we also end up killing any beneficial bugs that may be helpful for the long-range health of the animal, and we may leave a residue to contaminate the environment for a long time to come.

So, from my perspective, the holistic answers to bug problems:

- Use only what is necessary, when it is truly needed.
- Use natural products whenever possible.
- Enhance your dog's whole body health.

■ **Inner milieu.** In addition to the necessity for a functionally competent immune system, there are other parts of the inner body that are important for maintaining healthy skin. In turn, the skin can affect seemingly unrelated organ systems.

For example, there is good evidence that antibiotic use actually "downloads" the keratinocytes – that is, antibiotics may cause the keratinocyte stem cells to mature into cells that are less healthy and more prone to disease. And, both intestinal (inflammatory bowel syndrome, as one example) and lung problems (such as asthma) may incite

skin problems – although which disease condition comes first and which follows is often difficult to determine.

■ **Hormones** also have an affect on the skin. It is important to appreciate that all organ systems of the body ultimately affect the skin, but hormonal influences, particularly the sex and thyroid hormones, are especially important. The adrenal hormones (glucocorticoids) are also important primary contributors to skin disease whether they come from inner sources or are provided via veterinary prescription.

Hormone conditions that affect the skin have two components that differentiate them from other allergy or infectious-related conditions. First, they usually do not produce itching. Second, they typically occur over the body in a specific configuration known as a “hormonal pattern”: a bilateral patchwork of changes including skin thickening, discoloration, and/or hair loss or thinning.

Abnormal skin conditions

Dermatitis is a nonspecific term to describe inflammation of the skin. Dermatitis can be produced by numerous agents, including external irritants, burns, allergins, trauma, and infection (bacterial, viral, parasitic, or fungal). It can be associated with concur-

rent internal or systemic disease; hereditary factors also may be involved.

The skin’s response to insult manifests as any combination of pruritis (itching), scaling, erythema (redness), alopecia (hair loss), thickening of the skin, hyperpigmentation, oily seborrhea, odor, and hair loss.

Following are brief discussions of just a few of the more prevalent causes of dermatitis in dogs.

■ **Pyoderma** literally means “pus in the skin.” This accumulation of white blood cells in the skin can be caused by infectious, inflammatory, and/or neoplastic etiologies, but most commonly in dogs the term refers to bacterial infections of the skin.

Most skin infections are superficial and secondary to a variety of other conditions including allergies (flea allergy, atopy, food allergy); internal diseases (primarily hormonal diseases, especially of the thyroid or due to an excess of glucocorticoids from internal sources or prescribed by the vet); seborrhea (abnormal production of secretions of the sebaceous glands or the glands surrounding the hair follicles); parasitic diseases (mange, for example); or anatomic predispositions (from skin folds).

Any of a number of bacterial species may be involved, but *Staphylococcus inter-*

medius is usually the primary pathogen, often making it possible for other bugs to invade. It is important to remember that the normal skin of a dog has a healthy population of resident bacterial species; since these bugs are health-promoting, indiscriminate use of antibiotics should be avoided. To cause infection, *S. intermedius* needs to stick to the keratinocytes of the skin. Anything that changes the normally dry environment of the skin to a more humid one (such as skin folds) can predispose the host to an overgrowth of bacteria.

Holistic treatment for pyoderma consists of a combined approach that couples topical with internal medicines. External applications should be directed toward drying the wet (skin fold) areas and decreasing the bacterial populations to a level where the animal’s inner defenses can deal with them. Ideally, internal medicines will be directed toward enhancing the immune system as well as attacking the bacteria directly. Once again, it is important to appreciate that skin infections are usually a secondary response due to some other cause; determining that primary cause will be necessary for long-term healing.

■ **Atopy** is estimated to affect about 10 percent of the canine population. Animals with atopy are thought to be genetically predisposed to become sensitized to environmental allergins that are absorbed through the respiratory tract. Most of the symptoms of atopy (including intense itching) are exactly the same as those that result from food allergies, flea-bite dermatitis, contact allergy, or mange mites, thus compounding the problem of accurate diagnosis.

Symptoms include intense itching, which typically results in skin damage (often intense damage) from the dog’s self-trauma due to scratching, licking, and biting at the itch. Secondary bacterial infections are common. In some dogs, the only symptom of atopy may be chronic or recurrent otitis (inflammation in the ear).

Conventional medicine typically confronts the itch as its prime enemy, and its arsenal includes avoidance of the offending allergin; symptomatic therapy to control the itch (most commonly glucocorticoids which, with long-term use, effectively shut down the normal, inner immune system); and immunotherapy, that is, desensitization to the allergin or vaccinating against the allergin. At one time antihistamines were extensively used to treat atopy, but current research indicates that they are not effec-

Diet Tips for Promoting Skin Health

■ First, you must understand that in order to promote health, the diet must be formulated to meet the individual’s needs. There is no single diet that can suit all dogs!

■ Improve the diet of any dog with a skin problem. If he’s being fed a low- or mid-quality kibble, try a better-quality one. If he’s already receiving a top-quality dry food, move to a top-quality canned or commercial frozen diet. A home-prepared diet with a variety of fresh ingredients from the human larder is ideal.

■ Whatever diet you provide, it needs to be hypo-allergenic, again for the individual. (For more information on food allergies, see “Walking the Allergy Maze,” WDJ August 2004.)

■ Adding supplemental vitamins (vitamins A, C, and E) and antioxidants (especially the Omega-3 fatty acids) are beneficial.

■ Herbal remedies may be helpful: to enhance the immune system; to provide a rich source of antioxidants and other nutrients; to relieve itchiness; to calm nervousness and let the dog sleep better; and, for their direct benefit to the skin.

■ Don’t forget that skin therapy can come from the human hand; a daily massage is good skin-medicine for dog and human alike.



tive for relieving the itch associated with the disease.

Of course, avoiding the offending allergen isn't always plausible. What do you do when the dog proves to be sensitive to the grasses and trees in your own backyard? And remember that an intradermal skin test only reveals exposure to the allergin; it is not necessarily a measure of the dog's sensitivity to the allergin.

Holistic medicine takes a different approach. The goal here is to try to enhance the dog's innate immune system so he can better cope with his environment.

Holistic methods that enhance the immune system include acupuncture (proven to enhance the production and function of immune-important lymphocytes); herbal remedies (many herbs, but especially *Echinacea spp.*, enhance the balance of the immune response); and homeopathic remedies (many homeopaths feel that the primary way homeopathy works is by stimulating the immune system). Each of these methods has specific remedies to help control itchiness. In addition, moderate daily exercise, massage, and proper nutrition all enhance the immune response.

When the nits come to the grits, however, there is no medicine that will be effective *all* the time. You may need to combine some of the conventional methods with the alternative ones.

■ **Psychogenic dermatosis** is a general term that attempts to describe skin conditions that involve behavioral components. Nearly all itchy conditions will cause some degree of psychogenic stress, but some dogs apparently itch (or scratch) excessively for reasons confined to their psyches.

For some of these animals, behavioral therapy, either with or without pharmacologic interventions may be helpful. Other dogs – those with obsessive-compulsive or self-mutilating disorders – may not respond to any therapy.

■ **Skin tumors.** Tumors can occur in all the tissues of the skin and surrounding tissues, and they can be either benign or malignant.

In my experience, the malignancy or non-malignancy of a particular skin tumor is often difficult to assess, perhaps due to the fact that skin has an amazing ability to transform to a rapid growth phase (whether that phase be malignant or non-malignant) with such ease. Any lump or bump of the skin should be looked at by a veterinarian.

Simple needle biopsies can be extremely helpful for differentiating infections and inflammations from potential tumors. The pliability of the skin makes surgical excision of smaller-sized lumps easy to perform if it's deemed necessary.

Alternative medicines for skin

An accurate diagnosis is necessary to adequately treat conditions of the skin with either holistic or conventional medicine. In addition to a complete physical exam, this may require skin scrapings, examination of individual hairs, cytology, fungal and/or bacterial cultures, and (especially when systemic disease is suspected as a cause) blood and urine tests. Intradermal skin testing has been used to determine specific allergins, but its use has recently come into question (a positive test only indicates past exposure to a particular antigen, and the significance of this for determining a treatment regime is questionable).

Once you know with some degree of certainty what you are dealing with, you have to embrace the fact that skin is an extremely complex organ system that oftentimes requires an approach to healing that is multi-factorial, requiring the use of many healing disciplines to be effective.

In other words, it's essential that you understand:

- the enemy (the cause of the disease);
- that the enemy will likely be present in complex ways (most often there are several factors that are contributing to the disease);
- that you may need to bring in an entire army of different healing modalities to be effective; and
- that the battle may be long and costly.

Finally, you and your team of holistic practitioners should develop an exit strategy *from the very beginning of treatment*. Decide ahead of time how long you plan to stay with any one treatment regime, and when it will be the time to switch to another approach.

Unfortunately, skin is often the first organ system to suffer harm and the last to heal. It is, after all, an organ with a huge surface area that is in contact with all kinds of stuff in the surrounding environment. It is also a highly sensitive organ that is influenced by the health and well-being of all the body's other organ systems. To add to

the overall problem, almost all symptoms of the skin can be caused by a multitude of conditions.

And as one further consideration: According to its theory of "movement of symptoms," homeopathic medicine believes that all diseases, no matter their origin, move through a set pattern that leaves the skin as the very last organ to heal.

My very basic holistic approach to healing the skin follows:

1. Eliminate any external source that may be causing the condition: parasites, bacteria, allergenic food sources, environmental irritants, and other sources of stress, physical and/or mental.
2. Explore all the possible causes, including psychogenic.
3. Try to narrow this list of differential possibilities down to a few of the more likely causes. This will, we hope, result in a more manageable list of probable causes.
4. Develop a plan of attack that will likely include lifestyle changes, nutrition (including supplements and nutraceuticals), herbal helpers, and either homeopathy or acupuncture as primary therapy.
5. Make a list of realistic expectations (how the dog's caretakers feel the therapy should progress, based on their desires, and on the practitioner's past experience with similar cases), and define a time frame (and a reasonable budget) for these expectations to come to fruition.
6. Be confident. Remember that most skin conditions will resolve themselves – *if* we provide a properly holistic foundation of inner health and outer resilience. But . . .
7. For the chronic, persistent cases, you may need to light candles, shake rattles, pray . . . do whatever it takes to make the magic of medicine work for you and your dog. (For more information, see "Walking the Allergy Maze," WDJ August 2004.) 🐾

Dr. Randy Kidd earned his DVM degree from Ohio State University and his PhD in Pathology/Clinical Pathology from Kansas State University. A past president of the American Holistic Veterinary Medical Association, he's author of Dr. Kidd's Guide to Herbal Dog Care and Dr. Kidd's Guide to Herbal Cat Care (see page 24).

Animal Alerts

A scary flu; a move to change laws to save pets.

Monthly magazines are at a disadvantage when it comes to breaking news; we send an issue to press at least a month before the date that will appear on its cover. So, usually, we don't even try to disseminate news. But the following items are of such importance and continuing relevance that we are going to break our standard rule.

CANINE FLU

An entirely new, highly contagious, and sometimes deadly strain of influenza is sweeping the country's canine population. Immunologists studying the flu strain have identified it as a variant of an equine influenza; scientists have never before witnessed an influenza virus "jumping" from horses to dogs. The first cases were reported in Florida, which has a large equine population and lots of Greyhound breeding and racing facilities.

Most dogs who become infected with the respiratory illness will experience a milder form of influenza, with symptoms that are similar to those of kennel cough, such as a persistent cough, low fever, and listlessness. However, some develop a more acute disease with clinical signs of pneumonia. Immediate veterinary care, including antibiotics and fluids, will be needed to save the life of a dog with severe symptoms, such as a high fever, secondary bacterial infection, and nasal discharge. Among the latter group, the mortality rate is 1 to 5 percent.

Because this is thought to be an entirely new virus, no dogs have any natural immunity to it, so virtually all dogs who are exposed to it, no matter their breed or age, will become infected. About 80 percent of the dogs who contract the illness will develop symptoms, although *all* the exposed animals will be capable of transmitting the virus to other dogs.

The virus is airborne; dogs can become infected from contact with anything that an infected dog sneezed or coughed on.

As we went to press, canine influenza had been found in states all across the coun-

try. Stay alert to any signs of illness in your dog; take her to a veterinary clinic if she shows signs of fever or coughing.

LEAVE NO PETS BEHIND

Like you, we were saddened and enraged by the news of thousands of people being forced to leave their pets behind when they evacuated from the September's hurricane zones. Though the many relief efforts undertaken in recent months to help the abandoned animals have been admirable, many thousands of these rescues would have been unnecessary if more people could have taken shelter with their pets.

Fortunately, many efforts are underway to change local, state, and federal laws and policies to allow people to bring their beloved dogs, cats, and other pets with them in evacuation vehicles and into shelters.

The Humane Society of the United States is urging Congress to quickly enact legislation that addresses the needs of the animal victims of disasters. The Pets Evacuation and Transportation Standards (PETS) Act, H.R. 3858, requires state and local emergency management agencies that receive federal funding to make plans for people with pets or the disabled who rely on service animals to safely evacuate along with their animals in the event of a disaster. Five U.S. Congressmen introduced the bill in the U.S. House of Representatives.

Three Dog Bakery of Kansas City, Missouri, has started hosting fund-raising events



in support of legislative efforts to enable the concomitant rescue of people and their animal companions in disasters. The company is also selling T-shirts (with profits supporting the efforts above) emblazoned with the message, "Leave No Man Behind; Leave No Pet Behind.™" See www.threedog.com or call (800) 4TREATS for more details.

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CALIFORNIA

Alameda Dog Bone Alley
 Carlsbad Dexter's Deli
 Granite Bay The Doggie Bag
 Laguna Niguel Something to Chew On
 Lancaster Whole Dog Wheaters
 Lincoln Ben's Bark Ave. Bistro
 Long Beach Pet Beastro & Bowteek
 Los Altos Five Paw Bakery
 Los Angeles Bichons and Buddies
 Mendocino Evergreen Barn Pet Grocery
 Santa Clara Humane Society Silicon Valley
 Sonoma Sonoma Dog Camp
 Sonora Margery Cavins
 Susanville Sit Spot Canine Center
 Ventura Ventura Pet Barn

COLORADO

Avada Pet Empawrium
 Castle Rock Pet Stuff Place
 Glenwood Springs High Tails Dog & Cat Outfitter
 Westminster Muttz Pet Goods and Gifts

DELAWARE

Wilmington Muddy Paws Pet Salon

DISTRICT OF COLUMBIA

Washington The Big Bad Woof

FLORIDA

Coral Springs Purple Poodle Pet Salon
 Naples Naples Dog Center
 Sarasota Holistic for Pets
 St. Petersburg Pet Food Warehouse

GEORGIA

Acworth Bells Ferry Veterinary Hospital
 Cumming Baths and Bones

ILLINOIS

Bloomington Common Ground
 Evergreen Park It's a Dog's Life
 Geneva Wet Nose
 LaGrange The Barker Shop
 Wheaton Natural Pet Market

INDIANA

Whitestown Zionsville Country Kennel

MAINE

Portland Fetch
 Portland Planet Dog Company Store

MARYLAND

Columbia Dogs and Company
 Frederick The Dawg Wash
 Huntingtown Clipper's Canine Café

MASSACHUSETTS

Canton Pawzitivly Dogs
 Hopkinton Main Street Animal Services
 Hyanis Wag This Way
 New Bedford Down to Earth Natural Foods
 Osterville Hot Diggity

MICHIGAN

Grand Rapids Furry Critterz Fashionz 'n Giftz
 Portage Pet Supplies Plus

MISSOURI

Kansas City Brookside Barkery & Bath
 Ladue Three Dog Bakery
 Springfield Wags 'n Wiggles
 St. Louis Four Muddy Paws
 St. Louis Pets in the City

NEW HAMPSHIRE

Warner Woodland Pet Resort

NEW JERSEY

Califon Pets Pets Pets
 Clinton Fur Majesty
 Union Sit Stay Play! Dog Training

NEW YORK

Burt Gray Dog Toys & Treats
 Ogdensburg Karen's Critter Care

NORTH CAROLINA

Carrboro Phydeaux

OHIO

Beavercreek Pawsitive Pet Solutions
 Columbus Pet People

OREGON

Corvallis Animal Crackers Pets Supply
 Eugene The Healthy Pet
 La Grande Gourmet Pets
 Portland Black Dog Natural Pet Supply
 Portland Green Dog Pet Supply
 Portland Salty's Dog Shop

PENNSYLVANIA

Annville Limestone Ridge Kennel

RHODE ISLAND

South Kingston Psychic Kitty

SOUTH CAROLINA

Charleston Dolittles

TENNESSEE

Clarksville Total Canine Care
 Memphis All About Pets

VERMONT

South Burlington Pet Food Warehouse

VIRGINIA

Alexandria Your Dog's Best Friends
 Arlington Dogma Bakery
 Suffolk The Hydrant

WISCONSIN

Cudahy The Natural Pet
 EauClaire Pet Foods Plus
 Menomonee Falls Friends of Nature
 Muskego Pet Supplies N More

CANADA

Enfield, Nova Scotia B & R Pet Supply
 Saskatoon Arlington Animal Hospital
 North Vancouver Dog Days Daycare

If you would like to buy copies of WDJ to sell in your dog-related business (at a special price), contact Jennifer Jimolka at JJimolka@belvoir.com or (203) 857-3144.

RESOURCES

BOOKS

WDJ Training Editor Pat Miller is author of two books: *The Power of Positive Dog Training* and the brand-new *Positive Perspectives: Love Your Dog, Train Your Dog*. Both books are available from DogWise, (800) 776-2665 or dogwise.com

Dr. Kidd's Guide to Herbal Dog Care and *Dr. Kidd's Guide to Herbal Cat Care* are published by Storey Books, (800) 441-5700 or storeybooks.com

The Encyclopedia of Natural Pet Care and *Natural Remedies for Dogs and Cats*, by WDJ contributor CJ Puotinen, are available from DogWise, (800) 776-2665 or dogwise.com. Puotinen is also author of several books about human health including *Natural Relief from Aches and Pains*, available from your favorite bookseller.

TRAINING AND INSTRUCTION

Pat Miller, CPDT, Peaceable Paws Dog and Puppy Training, Hagerstown, Maryland. Train with modern, dog-friendly positive methods. Group and private training, Rally, behavior modification, workshops, intern and apprentice programs. Call her at (301) 582-9420 or see peaceablepaws.com

The Association of Pet Dog Trainers (APDT) has references to member trainers in your area. Write to 150 Executive Center Drive, Box 35, Greenville, SC 29615, or call (800) 738-3647. The APDT database of member trainers can be seen at apdt.com

HOLISTIC VETERINARIANS

American Holistic Veterinary Medical Association (AHVMA), 2214 Old Emmorton Road, Bel Air, MD 21015. (410) 569-0795. Send a self-addressed, stamped envelope for a list of holistic veterinarians in your area, or search ahvma.org

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WHAT'S AHEAD

Comes When Called

This is a basic skill, but a vitally important one – and for some reason, one of the hardest for many people to teach their dogs!

What's New in "Wet" Food

Here's one hint: It's not always in a can anymore.

Gear of the Year

Some of the best pet care and training products we – and you – have seen all year.

Brains of the Operation

The Tour of the Dog looks at the central nervous system.

Best Books on Positive Training

Don't waste your time on manuals that advocate the use of punishment halfway through. Here are some easy-to-read books that are positive all the way to the end.

Still to Come:

- Commercial frozen raw diets
- The best leashes
- The case for tails and dewclaws
- Holistic heartworm prevention and treatment