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NUMBER 2

The Whole Dog Journal™

A monthly guide to natural dog care and training

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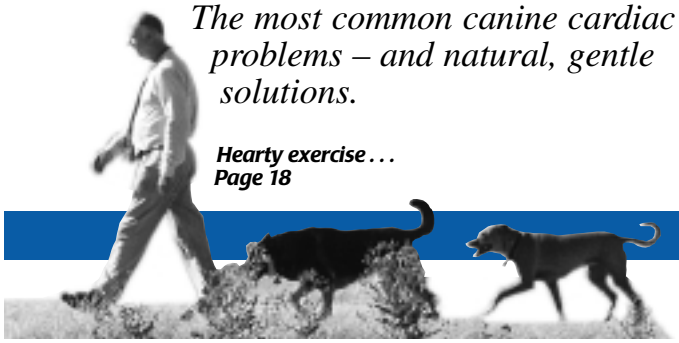

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ALSO IN THIS ISSUE

EDITOR'S NOTE

Proudly Independent

Our readers are the only folks we're beholden to.

BY NANCY KERNS

They say it's a sign of success when your detractors start spreading false rumors about you. So I'm choosing to be flattered by the fact that someone asked me recently whether it was true that WDJ is owned by or affiliated with People for the Ethical Treatment of Animals (PETA).

First – No!

Second – It's not the first time I've been asked this! In the past two months, *three* people have made the exact same inquiry. Interestingly, each person who asked me this was a representative from a dog food manufacturer. And when pressed, each would say only that they had heard a "rumor" that WDJ and the animal rights organization were somehow linked.

My best guess is that the person or people who began this rumor are affiliated with a pet food that we have either criticized or one whose products are far from meeting our selection criteria, and they are attempting to undermine our generally good standing in the dog world. Maybe someone thought that linking our name with an organization that is held in contempt by many would be a good way to malign us.

The timing is a bit ironic, given that I've been working on a feature article that is highly critical of PETA's 2003 campaign against The Iams Company (for its purported cruelty to dogs and cats that are used in pet food feeding trials) and pet food testing in general. Its publication (tentatively scheduled for May) should dispel this particular rumor.

(I should add that I am not at *all* familiar with PETA's work – good, bad, or indifferent – other than the particular campaign mentioned above. I am aware it has a poor reputation among dog owners, however.)

I've said it before and I'll say it again: Working for a company like Belvoir Media Group (WDJ's publisher) is a dream for journalists who really care about their subject matter. Consumer-oriented publishing is the company's mission. It doesn't have any agenda beyond serving its readers. WDJ doesn't accept any advertising, specifically so we can maintain an absolutely independent editorial voice, unencumbered by pressure from advertisers. All these are reasons why I find the rumor so interesting . . . and fiendish, too.

Anyway, I'm pleased to bring you a great issue this month. Longtime readers may be surprised to see that we have adjusted our recommendation regarding head halters, which we had previously enthusiastically endorsed (with certain stated caveats) for dogs who pull excessively when on leash. Training Editor Pat Miller has a new tool she likes better for that job, and she does a wonderful job of explaining her evolving opinion of the training tools.

Renowned herbalist Greg Tilford returns this month to lay a solid foundation upon which the principles of holistic dog care can be safely and effectively built.

Kansas veterinarian Randy Kidd offers another valuable installment in his "Tour of the Dog" series, this month focusing on the heart. Owners of dogs with any sort of cardiac condition will be empowered by the article to take all sorts of immediate action that will benefit their dogs – or at least, be given a number of new things to ask their veterinarians about!

Also, check the list of articles (on page 24) that are coming up in the next issues of WDJ. We've got lots more great stuff in the works.

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.

The Whole Dog Journal™

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Making Headway

We refine our recommendations for training and management tools.

BY PAT MILLER

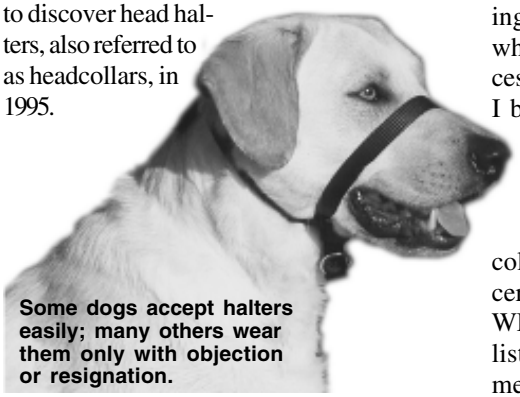
Many dogs pull on leash so much and so hard that it can be difficult, even dangerous, to take them for walks. Frustrated owners often stop trying to exercise and socialize their pullers, leaving the dogs bored, lonely, and underexercised in backyards. This can result in the development of undesirable behaviors – barking, digging and chewing, perhaps roaming – to alleviate boredom and expend energy. Adolescent, out-of-control, digging, barking, and chewing dogs frequently end up rehomed or surrendered to animal shelters.

This is unfortunate, as most dogs can be *trained* to walk on leash without pulling. I have discussed this process in feature articles (such as "Loosen Up!," in the November 2000 issue of WDJ) and reviews of no-pull products (such as "No Miracle Products," April 2001, and "A New SENSE-ation," October 2003).

The training process can require a lot of dedication and patience, however, and not everyone is up to the task. This is where pet product manufacturers step in, marketing a wide variety of training tools purported to stop problem pulling practically overnight.

Unfortunately, some of the products are quite painful and aversive for the dogs, defeating the big-picture goal of building a harmonious, enjoyable relationship with your dog. (And that's if the products work as advertised; many don't work at all.)

All of this explains why I was delighted to discover head halters, also referred to as headcollars, in 1995.



Some dogs accept halters easily; many others wear them only with objection or resignation.

A halter fits snugly on the dog's head, offering an attachment point for the leash (under the dog's chin) that is far forward from the site where collars or harnesses attach. Even large or strong dogs can't pull hard from their heads; they don't have the strength in their necks.

Also, the leverage afforded by this attachment site for the leash enables the handler to turn the dog's head toward her – away from whatever the dog is pulling toward – giving her the opportunity to mark the behavior with a click! or a "Yes!" and give the dog a treat to reinforce loose-leash behavior, actually furthering the training (not just management) process. Finally! A training tool that could help an owner gently prevent a dog from pulling on leash, without causing any physical pain!

I did find that a few dogs strenuously objected to wearing halters, and required *lots* of counter-conditioning and desensitization before they would tolerate wearing one. When I wrote my first article about halters for WDJ (in July 1998, when they were relatively new), my overall assessment was, "Although some high-strung dogs never learn to tolerate wearing something on their head and face, and some need a period of adjustment before they accept them, headcollars are the most effective and humane no-pull aid for most dogs."

With experience, reservations

After I learned about halters, I started using them occasionally with clients' dogs when appropriate, with considerable success. As I continued to use them, however, I began to notice some significant disadvantages, which, in many cases, appeared to outweigh the potential benefit of the halter.

I was not alone. Some of my training colleagues were beginning to voice concerns as well. In the June 2000 issue of WDJ, I wrote about halters again, this time listing concerns about halters shared by members of the Association of Pet Dog Trainers e-mail list, including:

- Some dogs hate them
- Head halters can come off
- The halters can be difficult to put on
- It can be difficult to fit the halters properly; some dogs are *very* difficult to fit
- Halters look like a muzzle, prompting some passersby to regard your dog with fear or suspicion
- Halter straps can rub (but can be covered with fleece to prevent this)
- There is potential for spinal injury if the collar is used improperly

In the same article, I reiterated my support for the training tool, but put more emphasis on my reservations. I wrote, "The head halter is the perfect tool for the right applications, but it's *not* the easy answer to *every* dog's leash walking needs."

Four years later

All of these concerns are still valid four years later, along with an additional one that has been growing in my mind and experience. Many, if not most, dogs who wear head halters appear depressed, at least to a degree, even if they are not actively trying to remove the halter. While this is a price that many people will gladly pay for the increased ease of walking their dogs, it's not

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WHAT YOU CAN DO . . .

- **For dogs who pull on leash despite positive reinforcement for loose-leash walking, use a front-clip control harness.**
- **For dogs with aggression issues, consider using a head halter as part of your behavior management and training program.**

one I feel comfortable advocating, especially since for the last decade I've made "positive" training the focus of my career.

It's important to remember that when we talk about positive training methods and tools, the perception needs to be that of the dog, not the human. Just because head halters seem far more humane to us than choke, pinch, or shock collars, it doesn't necessarily make them more positive for the dog.

I have used a head halter with Dubhy, my Scottie, to manage and modify his aggression toward other dogs. Although he tolerates it reasonably well, he tries to rub it off on every occasion that he wears it, and his demeanor is subdued, although I wouldn't go so far as to call it depressed. He clearly finds wearing the head halter irritating at best, perhaps even aversive.

Since one of the prime goals of counterconditioning and desensitization (CC&D) to modify aggression is to reduce stress – stress being a major factor of aggression – it would seem a contradiction to use an aversive training/management tool that *induces* stress in the dog!

So where does that leave dog owners in search of a gentle, positive training tool to teach polite leash manners and manage aggressive behavior? It's a quandary!

Ahead of the game

Fortunately, an even newer product offers a viable alternative to those who are seeking a tool to help minimize pulling on leash. I reviewed the original front-clip control harness (the SENSE-ation harness) in the October 2003 issue; now there are three different brands on the market. These tools help control the strong-pulling dog while avoiding many of the negatives of the head halter. Comparing them, I found:

- Most dogs accept them immediately, without *any* resistance
- It is difficult (but not impossible) for a dog to remove a harness
- The harnesses are easier to put on

The SENSE-ation Harness

- It does take some fiddling, sometimes a lot of fiddling, to *fit* the harnesses. As with head halters, some dogs can be more difficult to fit
- The harnesses look like – harnesses. There is no negative public perception of dogs wearing harnesses
- Harness straps can also rub (and can be covered with fleece) but rub less than halters
- Potential for injury with a harness is very slight to nonexistent

The front-clip control harness closely resembles an everyday harness. It has one strap that goes over the shoulders, one that goes under the barrel behind the front legs, and one that goes across the front of the chest. The harness slips easily over the dog's head; it's not necessary to have him step through any of the straps. In the middle of the front chest strap there is a ring for attaching the leash. For added security and to reduce "gapping" in the front straps, you can attach the leash to the collar ring as well.

When the dog pulls, the tension on the front chest ring turns the dog back to the handler, providing an opportunity for the trainer to reinforce desirable behavior (*not* pulling). Most dogs accept the harness immediately, and are much more manageable on leash with surprising speed. Short-legged dogs can sometimes step out of them, but if the leash is clipped to the collar as well, the likelihood of this is reduced, and if it happens, the dog is still restrained by the leash.

There are now three brands of front-clip control harnesses on the market. Despite a few differences in features, there appears to be very little difference in the products' effectiveness. I have used and like them all.

■ **The SENSE-ation Harness,** produced by Softouch Concepts of Union City, CA (866-305-6145; softouchconcepts.com). Softouch is the originator of the front-clip control concept. The SENSE-ation is made of nylon with nickel rings and plastic hardware. Each harness is a solid color and is available in five sizes for $21-$26. Softouch also makes an economy model, the **SENSE-ible Harness.** It comes in six sizes for $16 - $21.

■ **The K9 Freedom Harness,** made by Wayne Hightower of Los Angeles (800-246-6336; waynehightower.com). It comes in five sizes, for $21 - $26. Also made of nylon, the Freedom Harness uses a different color for each of the three straps, making it easier to remember which way it goes on the dog.

■ **The Easy Walk Harness,** produced by Premier Pet Products of Richmond, VA (800-933-5595; gentleleader.com). Available from trainers and vets, who can order them (Premier does not sell directly to consumers). Comes in five sizes for $25. Premier crafts its harness in two different colors, making it easy to put it on right-side-up. They also added a martingale loop in the front strap to help reduce gapping, which has proved to be a problem with some dogs.

I now routinely use these harnesses in order to facilitate training with pulling dogs who aren't responding well to positive reinforcement for loose-leash walking and rarely, if ever, recommend a head halter simply for pulling behavior.

Still great for aggression cases

While I use head halters much less than in the past, there are still occasions when I find them useful, worth the effort and potential negative fallout. One is when a dog is prone to using his teeth inappropriately, either in serious outward-directed aggression or out-of-control mouthiness directed toward the handler. The head halter is a great tool for preventing bites to others.

In a perfect CC&D program, the dog is never introduced to the stimulus that triggers his arousal at an intensity great enough to cause a strong emotional response; the best way to reduce the intensity of the stimulus is to keep it at a greater physical distance, at least in the early stages.

Since, with aggression, the stimulus is usually a person or another dog, and because in real life, it's impossible to keep all other people and dogs at a distance, I suggest using a halter. This gives you a high degree of control over your dog's head, enabling you to make an emergency escape on those occasions when an unleashed dog or toddler charges up to your dog unexpectedly. It's important, however, to complete a thorough desensitization program to the halter (see next page), and to make sure the dog is not unduly stressed by wearing it.

If your dog is simply too stressed by or won't tolerate the head halter, a muzzle, with the leash attached to the dog's regular collar, is a second option. Some dogs are less bothered by a muzzle, since it doesn't put varying degrees of pressure on the nose as leash tension changes. A dog with aggression issues should be comfortable wearing

a muzzle anyway, for those necessary vet visits and other times when the risk of a bite might be high. Use the desensitization process described below to acclimate your dog to a muzzle. The combination of a muzzle and front-clip control harness can give you nearly the same degree of safety and control as the head halter.

Another perfect candidate

A dog who nips and bites at his owner while walking on leash is an annoyance at best. At worst, the behavior can become dangerous, resulting in aroused bites that break skin and lead to a loss of control and damage to the relationship. In this case, the subduing effect of a halter can be useful, at least initially, to dampen the dog's enthusiasm for aroused leash-play. Plus, the halter enables the owner to direct the dog's mouth away from human body parts and clothing to manage the inappropriate behavior.

This is especially important with aroused leash-play-biting because other attempts to verbally or physically redirect the behavior can inadvertently reinforce the undesirable behavior; the dog sees it as the owner's participation in the game. Even harsh verbal or physical corrections (which I don't recommend anyway) can result in increased arousal from the dog. The halter can provide an opportunity that a harness cannot, to manage the inappropriate behavior while reinforcing desirable leash behaviors, until the halter is no longer necessary.

So, yes, we still reserve a space in our training toolbox for the halter, just not as much space as we did a few years ago, thanks to more recent developments in tools and techniques that foster positive relationships with our canine companions.

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. *For book purchase or contact information, see* *"Resources," page 24.*

Acclimating Your Dog to a Head Halter

A ONE-WEEK PROGRAM TO DESENSITIZE YOUR DOG TO THE HALTER, AND START TRAINING LOOSE-LEASH WALKING

Your dog's acceptance of the head halter depends in large part on how you introduce it to him. Our canine companions generally aren't accustomed to having something around their noses, and it takes a little getting used to. If you slap it on your dog's nose and start to drag him around by the leash, he will no doubt hate it. If you remove it from his head while he is fighting it, you will teach him that struggling gets it off.

Instead, if you take the time to introduce him to it gradually and associate it with something wonderful (like yummy treats), chances are you and your dog will be able to make use of a very helpful training tool. Before you begin to put the halter on your dog, follow the instructions that come with the halter to make sure it is properly fitted for your dog. Then you're ready to start. Here's how to go about it:

DAY ONE – A half-dozen times or so, hold the nose loop open with a treat behind it so your dog has to stick his nose into the loop to eat the treat. Use a reward marker (a click! or a "Yes!") and reward him each time. Repeat this exercise three or four times a day, a half-dozen repetitions each time. Wait a little longer each time he puts his nose in the loop before you click! and reward. Use a verbal cue (like "Halter!") each time you do it to start teaching him a word that means to put the halter on.

DAY TWO – Repeat the procedure from Day One, except now when the dog has his nose through the loop, pull gently down on the halter to put a little pressure on the nose loop. Repeat a half-dozen times, three to four times throughout the day. Keep using your verbal cue, reward marker, and rewards.

DAY THREE – Continue the same procedure, except after the dog has done the "nose in loop" two or three times, snap the buckle closed behind his ears. Let him wear it for several seconds. Keep feeding him treats to distract him from pawing at it. Unbuckle it after a few seconds, but only when he is calm, *not* when he is resisting (if he does). You don't want to teach him that resisting gets the halter off! If he tolerates the halter well at this stage, let him walk around a little with it on. Encourage him to follow you. Use your reward marker and treats generously.

DAY FOUR – Put the halter on as before. Let him walk around. Use your reward marker and treats. When he is calm, attach the leash to the ring under his chin. Try walking him with it in the house. Remember to use gentle pressure only; *never* jerk on the head halter. Always make sure the leash goes from under his chin directly to you, not behind his head and over his neck.

Any time he gives to the pressure of the leash by turning toward you, use your reward marker and give him a treat. Also click! and reward lots of times when he is near you, *before* the leash has a chance to tighten, to teach him that *not pulling* gets rewarded. Remember to remove the halter when he is calm, *not* when he is resisting.

DAY FIVE – Begin as you were doing on Day Four. If he accepts the halter and leash well indoors, go outdoors in a familiar environment, like your backyard. As a safeguard, attach a second leash to his regular collar, so if he slips out of the halter or is going to hit the end of the leash hard you can use the second leash as an emergency stop, then regain control with the head halter. This avoids a hard sideways jerk on his head and neck. Continue to use your reward marker and treats when he yields to leash pressure, or when he chooses to stay near you without pulling on the leash.

DAY SIX – Start as you did on Day Four, then move out to the backyard again. If he does well there, graduate to walking up and down the sidewalk in front of your house. Use your reward marker and treats, and remove the halter when he is calm.

DAY SEVEN – If your dog has progressed well through the first six days of the program, you are ready to tackle the world.

Why We Like Whole Foods

The rationale for our annual dry dog food selection and review.

BY NANCY KERNS

There are basically two main camps in the dog food manufacturing business. The overwhelming majority of the industry belongs in one camp; not surprisingly, we're fans of the other.

Let's call the first group Camp A, as in "A vitamin is a vitamin is a vitamin." These are the people who think that it doesn't matter what ingredients a dog food contains, as long as the end result contains the recommended daily amounts of vitamins, minerals, and major nutrients (protein and fat) needed by dogs.

The goal of nutritionists and feed formulators in Camp A is to manufacture a palatable product that contains at least as much total nutrition as required by law for the least amount of money. "Camp A Dog Food" has to be tasty enough to appeal to dogs' palates (if dogs won't eat it, it won't sell); it has to meet the "nutrient profiles" established by the Association of American Feed Control Officials (AAFCO, an advisory body that crafts model legislation for states to enact); and it has to be as profitable for its maker as possible.

Here's a fact that makes denizens of Camp A very happy: They can use practically anything as an ingredient in Camp A Dog Food – that is, anything that is "generally recognized as safe" (GRAS) for dogs.

So – duh! – they can't use *poison,* any substances known to cause injury to dogs, ingredients that contain harmful levels of pesticides, or feed that has been "contaminated with filth."

Health improves when food does, too.

But they *can* use all sorts of low-cost by-products of the human food or food animal feed manufacturing industry, such as chicken by-products (chicken heads, feet, and guts), brewers rice (small fragments of rice kernels that have been separated from the larger kernels of milled rice), or corn gluten meal (the dried residue from corn after the removal of the larger part of the starch and germ, and the separation of the bran by the process employed in the manufacture of corn starch or syrup).

Each of these ingredients (and many other by-products) cost little when compared to their original forms (in this case, chicken, rice, and corn), and yet they still can be mixed with other ingredients to make up a "complete and balanced" dog food.

How can that be?

First, *all* dry dog foods are formulated with a vitamin/mineral "premix" that ensures the final product contains at least the minimum amounts of the vitamins and minerals deemed necessary (the AAFCO nutrient profiles) to maintain dogs in certain demographics ("maintenance" or "growth and reproduction"). That's because the cooking process (whether it's an extruded or baked food) pretty much destroys all the vitamins present in the food ingredients, and because (with a couple of exceptions) the ingredients lack the minerals dogs need.

As far as the "macronutrients" (protein and fat) are concerned, there are any number of ways that a dog food maker can reach the target levels of these nutrients. The most profitable method is to mix large amounts of inexpensive proteins and fats with small amounts of high-quality, energy-dense proteins and fats.

You'll note that we didn't mention carbohydrates. While it's hard for many people to believe, given that the vast majority of us have fed carb-loaded kibble to our dogs all our lives, dogs have *no* carbohydrate requirements. Studies have proven that a dog can get along just fine on a diet that contains *zero* carbs. Kibble is loaded with carbs because a) dogs *can* utilize them as a source of energy; b) carbs can facilitate absorption of other nutrients in the gut; c) when you are making a food that only needs to be about 18 percent protein and 8 percent fat, you need a lot of other stuff to flesh out the formula, and d) carbs are inexpensive (relative to fat and protein).

Plus, as it turns out, if a food mixture that contains more than about 45 percent animal products goes through an extruder (the kibble-making machine), the machine literally gums up and grinds to a halt.

B is for "better"

Contrast all that with this:

Ingredient quality, not cost, is of utmost importance to Camp B dog food makers. Camp B manufacturers aim to produce the

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WHAT YOU CAN DO . . .

- **Look for foods that meet our selection criteria and are available in your area. Understand that they will cost more.**
- **Switch foods slowly, replacing your dog's old food with a new food, bit by bit, over the course of a week or more.**
- **Watch your dog carefully for signs that a food does or does not work well for him. Switch foods if you see signs of intolerance, such as infected ears, gas, itchy skin or paws, goopy eyes.**

highest-quality food they can, and they have set their prices accordingly. These are the people who pay top dollar for chicken from companies who will guarantee that no long-dead birds get into the processing plant. Who buy premium low-ash lamb from New Zealand, and grass-fed beef from organic ranchers. Who develop long-term relationships with growers who produce the best crops consistently.

These people are *happy* when consumers ask them for proof of the quality of their ingredients, or for tours of their plants.

Also, nutritionists in this camp feel certain that foods are more than the sum of their vitamin, mineral, fat, and protein contents. Even though neither the FDA nor AAFCO has studied and proven it yet, Camp B Dog Food formulators believe there are beneficial substances in whole, high-quality foods that are not yet fully recognized or understood. These include enzymes, probiotics, prebiotics, and even antibodies (found in colostrum and eggs).

Phytochemicals (chemicals found in plants) are another huge class of substances that scientists are just now learning about. Many powerful antioxidants have been found in plants, such as lycopene (in tomatoes and cranberries), polyphenols (green tea), limonene (citrus), flavonoids (pycnog-enol, grapeseed, green tea, cayenne), and curcumin (tumeric). Other herbs, fruits, vegetables, and spices are yielding substances with anticancer properties, such as allylic sulfides (garlic), capsaicin (cayenne), and carotenoids (vitamin A precursors found in yellow, orange, and dark green fruits and veggies).

Camp B nutritionists also intuit that there are beneficial interactions between whole foods – synergies we don't yet understand.

Come over to our camp

What proof do we have that Camp B Dog Food is any better than Camp A's? We've seen the results ourselves, and so have our readers. Upgrade your dog's food, and, if you're paying close attention, you'll notice many improvements. He stops licking his feet. His ear infections go away and don't return. His anal glands don't require squeezing. His eyes clear up and his coat gets thicker and shinier. His behavior might even improve. Doesn't all that seem worth a trip to Camp B?

If so, check out the list of B-type foods on our "approved" foods list (next pages), or, using the same selection criteria we used to choose the foods on our list, evaluate *your* favorite dog food.

WDJ's Dry Dog Food Selection Criteria

- **We look for foods that contain a lot of high-quality animal proteins.** We like manufacturers to disclose the approximate percentage of meat, poultry, or fish in their food, but they rarely will, so we look for foods that *appear* to have lots of animal protein. Ingredients are listed in order or their weight, so ideally a food will have one or two animal proteins in the first few ingredients. Understand that whole meat (chicken, beef, lamb, etc.) contains a lot of water weight. If a food list starts out with chicken, and there is no other animal protein listed until 7th or 8th on the list, the food does *not* actually contain a lot of animal protein. But if it starts out with chicken, and chicken (or another animal) "meal" (essentially dehydrated chicken) is number two or three on the list, chances are the product contains an admirable amount of animal protein. Animal proteins tend to be more digestible and palatable than plant proteins and offer a wider array of essential and nonessential amino acids.

- **We reject any food containing meat by-products or poultry by-products.** It's just about impossible to ascertain the quality of by-products used by a food manufacturer. We've spoken to representatives who swore they used only the finest sources of by-products, but when asked, they *all* say that! The fact is, there is a much wider range of quality in the by-products available for pet food manufacturing than there is for whole meats. Whole meats are expensive, and because they are expensive, dog food makers insist on their quality to an extent that is unreasonable when buying bargain-basement by-products. So, because the quality cannot be confirmed, we advise that you just avoid foods that contain by-products. **NOTE:** Some of our past selections do contain meat and/or poultry by-products. To winnow down our list to the very best foods possible, we no longer select products that contain meat or poultry by-products.

- **We reject foods containing fat or protein not identified by species.** "Animal fat" is a euphemism for a low-quality, low-priced mix of fats of uncertain origin. "Meat meal" could be anything. We shudder.

- **We look for the use of whole grains and vegetables.** That said, some grains and vegetables have valuable constituents that accomplish specific tasks in a dog food formula. We don't think it's worth getting too excited about one vegetable fragment and one grain by-product on the ingredients panel. Our tolerance diminishes in direct proportion to the *number* of fragments and by-products contained in a food and the prominence on a label; the more there are, and/or the higher they appear on the ingredients list, the lower-quality the food.

- **We eliminate all foods with artificial colors, flavors, or preservatives** listed on their ingredients panels. **NOTE:** Some ingredients – usually fats, and some fish products – arrive at the pet food factory containing artificial preservatives; these do not have to be disclosed on the ingredient list, since the maker did not add them.

- **We eliminate all foods with added sweeteners.** Dogs, like people, enjoy sweet foods. Like people, they can develop a taste for these nutritionally empty calories.

To meet our approval, food need not offer the following. But we like it when they do.

- We really appreciate it when the date-code or production code is easy to find, read, and interpret.
- The more items listed on a product label's "guaranteed analysis," the better.
- We like to see the caloric content of the food listed on the label.
- It makes things so much easier when all of the food maker's contact information (address, phone, Web address) is listed on its product labels.
- We feel better when a food has passed an AAFCO feeding trial.
- We appreciate organic ingredients.

Previous Selections

on WDJ's "Approved Dry Foods" list

Artemis
Artemis Pet Foods
Canoga Park, CA
(800) 282-5876
artemispetfood.com

Azmira
Azmira Holistic Animal Care
Tucson, AZ
(800) 497-5665
azmira.com

Back to Basics
Beowulf Natural Foods
Syracuse, NY
(800) 219-2558
beowulfs.com

Bench & Field Holistic Natural Canine
Bench & Field Pet Foods
Mishawaka, IN
(800) 525-4802
benchandfield.com

Blue Buffalo
The Blue Buffalo Company
Wilton, CT
(800) 919-2833
bluebuff.com

Burns
Burns Pet Nutrition
Chesterston, IN
(877) 983-9651
bpn4u.com

California Natural
Natura Pet Products
Santa Clara, CA
(800) 532-7261
naturapet.com

Canidae
Canidae Corp.
San Luis Obispo, CA
(800) 398-1600
canidae.com

Chicken Soup for the Pet Lover's Soul
Diamond Pet Products (a division of Schell & Kampeter)
Meta, MO
(800) 442-0402
chickensoupforthepetloverssoul.com

Drs. Foster & Smith
Drs. Foster & Smith
Rhinelander, WI
(800) 826-7206
drsfostersmith.com

Eagle Pack Holistic Select
Eagle Pet Products, Inc.
Mishawaka, IN
(800) 255-5959
eaglepack.com

Flint River
Flint River Ranch
Riverside, CA
(909) 682-5048
(sold through independent reps)

Foundations
Petcurean Pet Nutrition
Abbotsford, BC
(866) 864-6112
petcurean.com

Fromm Four Star Nutritionals
Fromm Family Foods
Mequon, WI
(800) 325-6331
frommfamilyfoods.com

Go! Natural
Petcurean Pet Nutrition
Abbotsford, BC
(866) 864-6112
petcurean.com

Hund-N-Flocken
Solid Gold Health Products for Pets
El Cajon, CA
(800) 364-4863
solidgoldhealth.com

Innova
Natura Pet Products
Santa Clara, CA
(800) 532-7261
naturapet.com

Karma Organic
Natura Pet Products
Santa Clara, CA
(800) 532-7261
karmaorganic.com

Lick Your Chops
Healthy Pet Foods, Inc.
West Chester, PA
(800) 821-4640
healthypetfoodsinc.com

Lifespan
Petguard
Green Cove Springs, FL
(800) 877-petguard
petguard.com

Limited Diets
Innovative Veterinary Diets
Pittsburg, PA
(800) 359-4483
(sold through veterinarians only)

Merrick Pet Foods
Merrick Pet Care
Hereford, TX
(800) 664-7387
merrickpetcare.com

Mmillennia
Solid Gold Health Products for Pets
El Cajon, CA
(800) 364-4863
solidgoldhealth.com

Natural Balance Ultra Premium
Dick Van Patten's Natural Balance
Pacoima, CA
(800) 829-4493
naturalbalanceinc.com

Newman's Own Organics
Newman's Own Organics
Aptos, CA
(800) 865-2866
newmansownorganics.com

Organix
Castor & Pollux Pet Works
Clackamas, OR
(800) 875-7518
castorpolluxpet.com

PHD Viand
Perfect Health Diet Products, Inc.
Elmsford, NY
(800) 743-1502
phdproducts.com

Pinnacle
Breeder's Choice Pet Foods
Irwindale, CA
(800) 255-4286
breeders-choice.com

Prairie
Nature's Variety
Lincoln, NE
(888) 519-7387
naturesvariety.com

Prime Life
Owen & Mandeville Pet Products
Oxford, CT
(888) 881-7703
ompetproducts.com

Royal Canin Natural Blend
Royal Canin USA, Inc.
St. Peters, MO
(800) 592-6687 (US); (800) 527-2673 (Can)
royalcanin.us

Timberwolf Organics
Yukon Nutritional Co.
Dundee, FL
(863) 439-0049
timberwolforganics.com

VeRUS
VeRUS Pet Foods, Inc.
Abingdon, MD
(888) 828-3787
veruspetfoods.com

Wellness
Old Mother Hubbard
Lowell, MA
(800) 225-0904
oldmotherhubbard.com

Wysong
Wysong Corporation
Midland, MI
(800) 748-0188
wysong.net

NEW to WDJ's "Approved Dry Foods" list

MAKER, CONTACT INFO	VARIETY, FIRST 6 INGREDIENTS, MIN.% PROTEIN, FAT; MAX.% FIBER, MOISTURE
by Nature BrightLife by Nature Pet & Animal Feeds (a division of Blue Seal Feeds, Inc.) Londonderry, NH (800) 367-2730 bynaturepetfoods.com	**"Canine Formula":** Chicken meal, lamb meal, barley, rice, oats, chicken fat . . . 28% protein; 18% fat; 5% fiber; 11% moisture Awesome food from a sincere company. They offer full disclosure of any info needed. Seven nutrients (beyond the required four) listed on the Guaranteed Analysis (GA). Our kind of folks.
Canine Caviar Canine Caviar Pet Foods Anaheim, CA (800) 392-7898 caninecaviar.com	**"Chicken & Pearl Millet Adult":** Chicken meal, pearl millet, brown rice, chicken fat, white fish meal, alfalfa meal . . . 26% protein; 16% fat; 4% fiber; 8% moisture Maker also lists (though not in the GA) levels of the entire AAFCO nutrient profile, and then some. Contains lots of herbs and Omega-3 and -6 EFAs.
Cloud Star Kibble Cloud Star Corporation San Luis Obispo, CA (800) 361-9079 cloudstar.com	**"Chicken":** Chicken meal, barley, brown rice, deboned chicken, oats, vegetable oil . . . 30% protein; 9% fat; 2% fiber; 10% moisture Formula also contains lots of whole fruits, herbs, and vegetables. Order from maker for direct ship to your door, free for orders of $50 or more.
Evolve Triumph Pet Industries Inc. Warwick, NY (800) 331-5144 evolvepet.com	**"Adult":** Lamb, chicken meal, brown rice, white rice, chicken fat, rice bran . . . 25% protein; 15% fat; 5.5% fiber; 10% moisture Recent improvements in this food, from a company with a 60-year history, have edged it onto our list, rice-heavy as it appears to be. But it illustrates that the industry is slowly moving in the direction of "Camp B." Hurray!
Natural Choice Ultra Nutro Products, Inc. City of Industry, CA (800) 833-5330 nutroproducts.com	**"Adult":** Chicken meal, brown rice, rice, lamb meal, rice bran, sunflower oil . . . 26% protein; 12% fat; 4% fiber; 10% moisture 75-year-old company follows suit. Nutro includes probiotics, herbs, glucosamine, and chondroitin in this rejuvenated line.
Premium Edge Premium Edge Pet Foods (a division of Schell & Kampeter) Meta, MO (800) 977-8797 premiumedgepetfood.com	**"Adult":** Chicken, chicken meal, brown rice, cracked pearled barley, white rice, turkey meal . . . 26% protein; 15% fat; 3% fiber; 10% moisture And yet another long-established, big player in the market adds a "Camp B" food to its lineup. Eight additional nutrients, including Omega-3 and -6, glucosamine, and chondroitin listed on its GA.
Wellness Simple Food Solutions Old Mother Hubbard Lovell, MA (800) 225-0904 oldmotherhubbard.com	**"Venison":** Brown rice, venison, brown rice protein, flaxseed, sunflower oil, natural venison flavor . . . 21% protein; 12% fat; 3% fiber; 11%moisture Meant to be used in an elimination diet, to help identify whether a dog is allergic to or intolerant of certain ingredients. Also comes in a duck variety.

Easing Winter Aches

Extra care is needed for older and arthritic dogs when it's cold and damp.

BY GREGORY TILFORD

Whether winter comes as a swirling snow storm, a nose-biting blast of cold on a bright blue day, or in the form of a wet, gray fogbank that robs *any* body of its fire, it will likely bring a reminder of our age and old injuries as well.

For me it is an aching lower back and a stiff right shoulder. Almost every morning I awaken to think that I should have listened to my elders when I was young. "You'll feel that later!" they would say.

Yes, I really *should* have done things slower in my youth – and I should have doubled up on my glucosamine *many* winters ago!

Perhaps the same rings true for my best friend Willow, a 13-year-old Shepherd-mix. The earliest sign of cold or wet weather comes to her as a stiff back leg, the one she had reconnective cruciate ligament surgery on four years ago. She gets out of her bed more slowly these days, and I can hear her groan at night, as she repositions herself on her sofa (yes, *her* sofa!).

Indeed, I owe my girl some special seasonal comforting – a good, loving massage and perhaps another chiropractic adjustment.

The big picture

But Willow also needs me to make some changes in her lifestyle.

It's easy to blame the seasonal aches and pains in life to weather changes and the inevitable effects of aging, but these discomforts usually stem from deeper issues. And while it is true that chronic arthritis, joint stiffness, and other forms of degenerative joint disease can often be linked to old injuries, genetic predisposition, or immune mediated disease, it is important to know that *all* cases of joint discomfort will likely be compounded by one thing: a poor or inappropriate diet.

In fact, much of the chronic arthritis suffered by dogs could have been completely prevented by providing a wholesome, natural diet together with a few critical supplements and the right exercise.

Older dogs like Willow, above, and those with major injuries or surgeries in their past benefit from a little extra TLC, especially in the winter.

The Whole Dog Journal

WHAT YOU CAN DO . . .

- **Don't be too quick to dismiss your old dog's inactivity or stiffness as "normal" for his age; he may have an acute condition that requires treatment.**
- **Have your older dog examined by your holistic veterinarian twice a year; discuss your dog's diet and supplements with the vet at that time.**
- **Try an improved diet and natural, gentle treatments before using prescription pharmaceuticals.**
- **Vitamin C helps many dogs with arthritis; use sodium ascorbate, rather than ascorbic acid.**

Diet is key

Good quality protein – based on its digestibility and completeness of its amino acid composition – is at the nutritional core of arthritis prevention. However, many commercial dog foods (especially the inexpensive ones) are made with poor quality or inappropriate protein ingredients.

Whether you care for an arthritic elder or are planning long-term prevention strategies for a new puppy, start *feeding the best food you can afford right now* –

food that is made with top quality, whole meat protein ingredients. At the very least, avoid foods that utilize by-products (meat and grain) as their main ingredients, and those with chemical preservatives or artificial flavorings. If possible, feed a home-prepared or commercially produced raw or cooked diet.

Enzymes and probiotics

It is also important to optimize the digestion and final elimination of the good food you feed. This is easily accomplished with a sprinkle or two of a digestive enzyme and probiotic supplement with each meal.

Probiotics (i.e., bifidus, acidophilus, etc.) are types of bacteria that are beneficial to the body. They work in concert with digestive flora in the intestines to break down food and eliminate waste, enhance the absorption of the nutrients (vitamins, minerals, fats, and proteins) in the food a dog eats, and even stimulate the body's production of immune-boosting substances such as immunoglobulin antibodies (IgA).

Digestive enzymes are produced in the salivary glands, stomach, and small intestine – and are available in supplement form. They immediately begin the chemical breakdown of foods they come into contact with. Certain enzymes, called proteases, break down proteins; amylases break down carbohydrates; lipases break down fats; and cellulases break down fiber.

Digestive enzymes also assist with transport of nutrients throughout the body and help dissolve and remove accumulations of crystallized waste in the joints. Many enzymes, such as bromelain (derived from pineapple) and papain (found in papaya) also have anti-inflammatory activities, and reduce arthritis pain in humans and animals. *(Editor's note: Author Greg Tilford's company makes a great enzyme/probiotic supplement. See "Resources," page 24.)*

Essential fatty acids

It is also important to supplement each meal with an essential fatty acid (EFA) supplement that is balanced to meet the nutritional needs of dogs. The best will contain a combination of both vegetable oils (i.e., borage, evening primrose, black currant, wheat germ, or flax oils) and whole body fish oils.

The Omega-3 and Omega-6 fatty acids contained in these oils serve to regulate the body's inflammatory responses, and are essential to the process of building and maintaining healthy joint tissues. In other words, if EFAs are deficient in the diet, so will be the body's effectiveness toward dealing with injuries and post-traumatic joint irritation. EFAs are also critical elements of skin and coat health and strong resistance to flea infestation .

Numerous studies have demonstrated the benefits of fatty acid supplementation for improving the symptoms of arthritis, allergic skin disease, and chronic pruritus (itchiness) in dogs. However, firm answers regarding the ideal dosage of fatty acids, ratio of Omega-6 to Omega-3, and complementary dosage of other vitamins and trace minerals are still elusive or contradictory.

It's possible that no ratio or combination of fatty acids is best for *all* dogs, because each individual is different, with different needs. Some dogs do best with one oil, while others do better with another, just like humans. The best way to take advantage of the positive effects of these supplements is to provide as broad a diversity of EFA sources as possible, so the individual's body can match its unique needs with its personal metabolic abilities. (That said, I think most dogs do better with meat/fish-source Omega-3 supplements over plant-sourced Omega-3s.)

I encourage all dog owners to try one of the several excellent EFA oil supplements available in their local pet supply stores. Follow the manufacturer's recommendations of how much to feed – even if your dog seems perfectly healthy – and observe him carefully for signs of improved vitality and health. Try another brand or type of fatty acid supplement if the first one fails to produce noticeable enhancement.

Going with glucosamine

If, like my dear Willow, your companion is already experiencing the effects of old injuries or chronic arthritis, you should consider a few other supplements as well. At the top of my list of "must use" supplements is glucosamine.

Derived primarily from bovine cartilage and shellfish, glucosamine sulfate and N-acetyl glucosamine are amino sugars that work within the body to lubricate, protect, and help rebuild damaged joint tissues. The amount and frequency of glucosamine you will need to feed your dog to see appreciable results will be gauged by your dog's size, activity level, and his physical condition.

As a bare minimum, most dogs will need at least 350 mg of glucosamine per day to realize the benefits of the supplement, but

"Ask your veterinarian . . ."

When it comes to supplement or herb dosages, our policy is to offer a conservative suggested amount, as well as to recommend that you discuss any supplementation with your holistic veterinarian. We *want* to enable you to put the information in WDJ into practice immediately; that's why we offer suggested dosages. But it *is* very important to work with a veterinarian to oversee and help you manage your dog's supplementation.

To be helpful and not harmful, medicine – whether it is conventional and Western-based or alternative – must be practiced on individuals. There is no form of medicine, whether it's an herb or a pharmaceutical drug, that is good for *all* patients with a given condition. In order to prescribe the best treatments (and dosages) for *your* dog, your veterinarian must examine your dog on a regular basis. Every dog owner should locate and visit a holistic veterinarian to identify their companion's individual needs and recommend a custom-tailored treatment, maintenance, or prevention protocol.

If you don't already have a holistic veterinarian, find one as soon as possible – before you really need one.

Many people call and write us with the complaint that their veterinarians are not knowledgeable about the nutrients, herbs, and other treatments that we discuss in these pages; many readers say *they* know more about canine nutrition or alternative therapies than their vets. Our standard response is that they must then actively search for a veterinarian who has sought out advanced education in these areas, or one who is willing to do so. It's great when dog owners know a lot about certain treatments, but they really need their veterinarian's understanding and complicity to ensure their animals' safety. – *Nancy Kerns*

those with preexisting joint problems may need considerably more. A 65-pound dog with early symptoms of degenerative joint disease may require 1,500 mg or more each day. Discuss the appropriate dosage for your dog with your holistic veterinarian.

Chondroitin sulfate, a component of glucosamine that is often sold as a standalone joint supplement, may serve similar purposes. However, I share the opinions of many of my peers and teachers – that the larger molecule of chondroitin may not be absorbed as efficiently in the intestinal tracts of dogs. Therefore, my choice is straight glucosamine, preferably in liquid form, which I suspect is more efficiently absorbed in the short canine digestive tract.

Vitamin C

Chances are that if your dog benefits from glucosamine, he will respond favorably to a vitamin C supplement, too. Although the canine body produces its own vitamin C, supplements of this vitamin will help with assimilation of lipids (including the EFA oils you feed), optimize the body's use of the glucosamine supplement, and support collagen synthesis, which is critical to bone and connective tissue repair. Supplemental vitamin C may even help slow progression of hip dysplasia in predisposed dogs.

Vitamin C is available in many forms, and veterinarians and nutritionists have varying opinions regarding which form is best utilized by dogs. Ascorbic acid, the type most commonly used in supplements for

The FDA, Drugs, and Your Dog

BY NANCY KERNS, WDJ EDITOR

By now, everyone has read or heard something about the dangers of the powerful nonsteroidal anti-inflammatory drugs (NSAIDs) that were available by prescription for people suffering from arthritis pain.

Merck took the first hit, when studies found its prescription arthritis pain reliever Vioxx doubled the risk of heart attack and strokes in people who took the drug. Not long after, Pfizer revealed that a study of its leading pain reliever, Celebrex, caused a similar problem when taken at high doses. As people scrambled to find safer replacements for these effective but new drugs, they looked back to naproxen (best known as Aleve, made by Bayer), which has been on the market in prescription form since 1976. Scrutiny of its safety record showed that it, too, appeared to cause a higher heart attack and stroke risk.

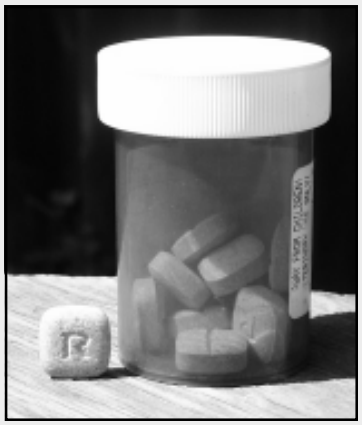
In the recent press reports, many fingers have been pointed at the Food and Drug Administration (FDA), for failing to protect consumers from "bad drugs." The agency, after all, is responsible for reviewing the drug manufacturers' pre-approval studies on human and veterinary drugs, approving them when appropriate, and monitoring the "adverse drug event or ADE" reports that are filed when (knowledgeable, conscientious) doctors and clients report problems. The FDA is also responsible for stopping the sale of any drug that is found to be harmful after its release.

As we have described ("Administer With Care," WDJ June 2003 and "Use Corticosteroids With Caution," July 2004), the newer-generation NSAIDs approved for canine use *also* present significant risk of side effects. These effects are different from the ones caused by NSAIDs in humans (mostly heart attack and stroke). In dogs, the most common side effects noted include gastrointestinal problems and abnormalities of the liver. They also include abnormalities of the urinary, hematological, neurological, and immunological systems, and even behavioral problems and dermatological abnormalities.

Please understand that drugs – human and veterinary – are tested on a relatively small, select population before they are approved and released for mass marketing and consumption. (In the case of NSAIDs for canines, this may have been as few as 200-300 dogs in tightly controlled, supervised lab studies.) Then they are released and used by hundreds of thousands of patients – in appropriate *and* inappropriate cases, and in combination with a limitless number of other drugs and pesticides. In our opinion, the first few years following commercial sale is the first true, mass test of a drug, and the patients who are given these drugs in the first years following their approval are the first test subjects.

Some drugs are pulled within a year or two of release, unable to demonstrate safety in such an uncontrolled massive "test." Others – such as Rimadyl, Deramaxx, and EtoGesic, the most popular prescriptions for canine arthritis pain – are found to pose significant numbers of side effects, but remain on the market under increased surveillance and accompanied by updated warnings (just like Aleve and Celebrex).

While the FDA – and indeed, the drug testing, approval, marketing, and monitoring systems – may not be perfect, everyone *else* involved must also take a share of the responsibility for adverse drug events. This includes, of course, the drug manufacturers, who are under pressure to focus on profits. But doctors who prescribe drugs casually or reflexively are also partly to blame. Doctors are setting their patients up for disaster if they fail to thoughly review the literature accompanying a new drug before prescribing it, prescribe a drug inappropriately for patients at special risk of side effects, or fail to educate and monitor their clients as to the risk and signs of side effects.



Like Vioxx and other prescription NSAIDs for humans with arthritis, Rimadyl and other NSAIDs prescribed for dogs are known to cause serious side effects.

Patients (or in the case of veterinary drugs, owners of patients) must also take some responsibility for failing to educate themselves about the drugs and the potential side effects, or for misusing the drugs, relying on them as a sole "treatment" for a condition that should be addressed holistically.

The take-home messages: There is no such thing as a perfect drug. The more powerful a drug's effects, the more likely it is to have potent side effects. And the need for a drug's positive effects must always be weighed carefully, on an individual basis, against its negative effects.

humans, is not well-tolerated by dogs, and may cause diarrhea or stomach upset.

Many holistic veterinarians swear by calcium ascorbate, especially in the relief of arthritic symptoms. This pH-neutral mineral salt will not upset your dog's stomach, causing diarrhea or heartburn. "Ester-C" is a patented form of calcium ascorbate favored by many holistic vets. It contains additional metabolites (including a substance known as threonate) thought to offer additional benefits.

Still other holistic veterinarians swear by sodium ascorbate, another readily available and easily absorbed pH-neutral salt. Wendell Belfield, DVM, the earliest advocate of vitamin C supplements for dogs, vastly prefers using this form of the vitamin for dogs.

Herbs and joint repair

You might also consider adding a few herbs to the mix, to help your canine pal heal and find relief from his aching.

Yucca root *(Yucca schidigera),* alfalfa *(Medicago satvia),* licorice root, and other herbs that contain rich concentrations of phytosterols and other anti-inflammatory compounds are among the most popular of the herbal anti-arthritics. *Boswellia serrata* is also a popular choice for bringing relief.

It is important to remember that when used as stand-alone anti-inflammatory remedies, herbs can remedy only the *symptoms* of your companion's joint problems. However, when used as part of a holistic approach that incorporates diet and exercise in the program, herbs can offer some clear advantages over conventional arthritis drugs.

First, herbs are relatively safe – especially as compared to the likes of nonsteroidal anti-inflammatory drugs (NSAIDs) such as carprofen (better known by its trade name, Rimadyl), etodolac (EtoGesic), and deracoxib (Deramaxx). NSAIDs remain by far the most popular veterinary prescriptions for canine arthritis. They can bring rapid relief, but their critics say they may be responsible for the deaths of many dogs each year.

It's up to caring dog guardians to decide what is best for their companions. Just understand that safer alternatives may be as close as your kitchen cabinet.

Although nowhere near as fast-acting as pharmaceutical NSAIDs, common turmeric *(Curcuma longa)* can be very effective at reducing arthritic inflammation. And instead of presenting new risks of physical harm, it offers stimulatory and protective support to the liver. In other words, as turmeric assists in relieving pain and inflammation, it will also help with elimination of systemic waste – an issue that might actually be contributing to the real cause of your dog's arthritis.

Liquid extracts of horsetail are the easiest to assimilate. The silicon-rich, beneficial plant can cause urinary or digestive irritation in other (fresh or dried) forms.

Turmeric also adds the advantage of being a peripheral vasodilator, meaning that it helps warm the body and increase circulation to the joints, where added fluid circulation is needed for healing.

Studies suggest turmeric is most effective when standardized to contain a 95 percent concentration of its active curcuminoid constituents. Further, its anti-inflammatory effects seem to be amplified when the herb is fed in conjunction with digestive enzymes (specifically, bromelain).

A conservative therapeutic dose for a dog over 30 pounds is 100 mg of standardized turmeric (available in capsules at health food stores), added to food once daily, along with a digestive enzyme supplement containing bromelain. For the right dosage for *your* dog, ask your holistic veterinarian.

Horsetail *(Equisetum arvense)* is another fantastic herb for arthritic, achy dogs. It's a hairy-looking plant that contains so much abrasive silica it was once used to polish metal (hence its old common name, "pewter wort"). The magic of horsetail is contained within this silica, in the form of *silicon.* Silicon is an essential building block in the repair of joint tissue, but despite its abundant occurrence in the sands of the world's beaches, it is difficult to find in forms that can be digested and utilized efficiently by the mammalian body.

Enter horsetail. The silicon contained in the cell tissues of horsetail exists in a form that can be more readily absorbed by the body. In raw form, the fresh or dried plant is gritty, indigestible, and may cause irritation to urinary or digestive membranes. Therefore you should only opt for liquid extracts of the plant that have been filtered to remove gritty plant particles. One to two milliliters daily of an alcohol-free extract is a common dose range for dogs, but again, talk to your vet.

The right exercise

The next thing to bring into action in the prevention or treatment of arthritis is the proper type and amount of exercise. In the case of my old sweetie Willow, it is very important that like any athlete, she needs to stretch and warm up her muscles and joints before any strenuous exercise. Stiff joints and sleepy muscles are easily injured. Have your dog walk around a while before throwing a toy, especially during cold, damp weather or if playtime follows shortly after a long nap.

Also, don't let your elder dog convince you that she is just a big puppy who can take on whatever challenges you dish out. Feeling good and having fire in her eyes doesn't mean she should still leap after flying toys or race around on steep, slippery slopes, *especially* if she has old joint injuries. Keep the exercise low-impact. Running or swimming after a warm-up walk is fine, but cliff diving and scrambling over river rocks is not.

Don't forget that just because your well-nourished, properly loved companion may still act like puppy, her body is aging. Father Time demands respect. Right now he is telling Willow and me that it's time to get up and put another log on the fire.

My bones are aching.

Come on, girl!

Groan!

Greg Tilford is a well-known expert in the field of veterinary herblism. An international lecturer and teacher of veterinarians and pet owners alike, Greg has written four books on herbs, including All You Ever Wanted to Know About Herbs for Pets *(Bowie Press, 1999), which he coauthored with his wife, Mary.*

Making Scents

You can teach your dog how to use his nose for your benefit!

BY PAT MILLER

What do Russian tigers, mold, lost pets, cancer cells, bomb-making equipment, illegal drugs, tortoises, termites, and knapweed have in common? They are all subjects of innovative training programs that work with dogs to seek out a growing list of unique targets for our benefit.

Humans have taken advantage of dogs' incredibly keen sense of smell over the ages for such uses as hunting, tracking lost and fugitive humans, and more recently, the detection of bombs, narcotics, and other contraband. It's well known that a dog's nose is many times sharper than our own – estimates range from 10,000 to 100,000 times superior to ours, with a far greater number and variety of scent receptors in their noses, more neurons linking the nose to the brain, and a greater proportion of their brains devoted to smell.

We accept this without question as we routinely utilize our dogs' sense of smell to locate tennis balls we toss into deep grass in the dark; find treats and toys we stash around the house; search for us when we play hide-and-seek in the woods; and in Utility Obedience, retrieve the one item that has been handled by the owner out of a pile of identical-looking objects. Our dogs, if they ever thought about it, would have to conclude that we humans are seriously disabled in the nose department – we couldn't even begin to come close to duplicating the feats that they accomplish without thinking twice about it!

In addition to the now-familiar uses for a dog's smelling talent, trainers and researchers are only just starting to realize the best potential ways to make dog noses work for humans. For example, in 2002-2003, biologists in Russia trained dogs to help monitor a threatened species of tiger, the Amur Tiger, through a grant from the National Fish and Wildlife Foundation. The research team trained two dogs, not just to track tigers in general, but to actually identify *individual* tigers; one to 96 percent accuracy, the other to 89 percent accuracy.

Other new uses for dog noses include:

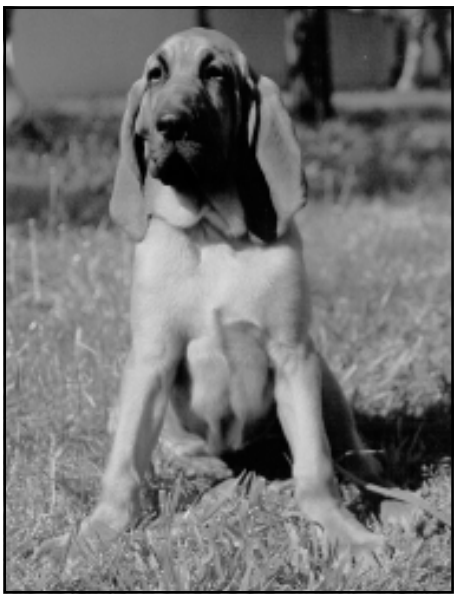
■ Mold and termite detection for home repairs and sales

■ Searching out desert tortoises (a threatened species) in the U.S. to help preserve critical habitat

■ Locating an invasive, nonnative weed in Montana for eradication purposes

■ Sniffing out the deadly venomous brown tree snake in produce shipments from Asia to prevent accidental international transport

■ Detecting cancer cells in human urine for diagnosis and treatment



While Bloodhounds are arguably the most famous scent dogs in the world, *all* dogs have a sense of smell that is thousands of times better than ours, and are candidates for scent work.

■ Locating leaks in pipe lines

■ Finding missing pets to prevent their suffering and allay human grief over the loss of beloved companions

■ Alerting Forest Service personnel to the presence of masses of gypsy moth eggs, so the destructive pests can be eradicated before they mature, spread, and destroy forests

What kind of dog?

According to Dr. Larry Myers, canine scent expert and professor of veterinary medicine at Auburn University in Alabama, *all* dogs have noses good enough to do scent work. However, trainability and interest in doing the job are important qualities; just because a dog *can* do scent work doesn't mean he *will*. For some kinds of work, the size of the dog and his coat length may determine suitability. (A large, heavy-coated dog may

The Whole Dog Journal™

WHAT YOU CAN DO . . .

- **Test your dog's interest in scent work by hiding his favorite toy, initially while he's watching, and then, once he understands the "game," in places he has to use his nose to find it.**
- **Reward your dog's successful location of a hidden item or family member with "high-value" treats, whether that means bits of fresh chicken or playing with a tug toy.**
- **If he shows consistent interest and/or talent at using his nose, shop for books and videos on training a scent dog. Call for a catalog (800-776-2665) or see dogwise.com.**

not be the best candidate for working in a desert, for example.)

Carole Schatz, CPDT, of San Diego, California, is the training director for a cancer detection study, still in the development phase, at Scripps Research Institute's General Clinical Research Center. Dogs selected for the Scripps study include Schatz's own dog, a Golden Retriever/Poodle mix, a Border Collie mix, Corgis, a Chihuahua mix, a Boxer, a Bernese Mountain Dog, an Italian Greyhound, German Shepherds, a Rhodesian Ridgeback, and an Aussie/Cocker mix. Schatz recruited the trainers for the program, and all the dogs are personal companions of the selected trainers.

In contrast is Hal Steiner of Bozeman, Montana, the owner of Rocky Mountain Command Dogs, a company that provides basic training services and also specializes in scent work. Steiner uses a specialized breed of dog that he created specifically for scent work purposes. He developed the "Rocky Mountain Shepherd" over decades, from Czech border patrol stock and hybrids of the red European wolf, and uses this breed almost exclusively for his scent work, although he does occasionally rescue dogs of other breeds that might be suitable for his purposes.

David Latimer, of Vincent, Alabama, owns FSI K9 Academy. In addition to training bomb, arson, narcotics, and tracking dogs, Latimer trains dogs to detect water leaks, mold, and termites. He uses small to medium-sized dogs such as Beagles, Rat Terriers, and Border Collies for mold and termite work; they fit better into some of the confined spaces where their quarry is sought. Most come from local shelters and rescue groups and some are donated. He rarely purchases a dog.

"I look for dogs who have what I call a strong 'work ethic,' says Latimer. "I want a dog with a high hunt drive and a high energy level coupled with a strong desire to please his handler. In addition, I look for dogs that are nonaggressive toward people and other animals."

Kathy "Kat" Albrecht, of Clovis, California, too, follows the eclectic approach to scent dog selection for her "pet detective" work. A former police detective and search dog trainer/handler, Albrecht began a new career finding lost pets when injuries sidelined her from police work. She now specializes in training what she has dubbed "missing animal response" (MAR) search dogs that are trained and certified to locate various lost pets. Albrecht trains dogs for three types of work: MAR Cat Detection K9s detect live and deceased cats; MAR Specific Scent K9s can detect the scent of any missing animal within a confined search area; and MAR Trailing K9s are trained to discriminate the scent of a lost dog and follow the scent trail to establish direction of travel in hope of finding the missing dog.

"Dogs best suited for MAR work are fixated on one of three things: cats, treats, or other dogs," she says. "For cat detection dogs we look for dogs who absolutely *pine* for kitties and give a physical response (tail-wiggles, butt-wag, etc.) when they detect a cat's scent. For specific-scent dogs, we want dogs who will fixate their attention on a piece of hot dog and *do anything* for that hot dog, ignoring all distractions. For trailing dogs, we look for the "dog park" type of dog who *loves* to play with other dogs."

Since Albrecht's goal is to develop a system to train a massive corps of certified MAR K9 handlers around the world, she keeps an open mind about breed possibilities, with just a few limitations. Albrecht thinks that pug-nosed dogs (Pugs, Boxers, Pekinese, etc.), tiny dogs (Chihuahuas, Teacup Poodles, etc.) and giant breeds (Great Danes, Irish Wolfhounds, St. Bernards) are just not appropriate for MAR work due to their physical limitations. She also looks for dogs that are at least six months old and no older than eight years to enter the MAR training program.

Training methods and history

While scent dogs are trained primarily with methods that focus on positive reinforcement, there is considerable variation as to how that operant principle is applied.

Cancer detection is a very new field of canine scent work. A study in England published in the *British Medical Journal* in September 2004 described how six pet dogs were trained to alert to the urine of patients

Positive Training Techniques Ideally Suited for Scent Work

All of the trainers we interviewed agreed that scent work was trained most effectively using reward-based, positive training methods, although there were differences of opinion over whether the reward should be food treats or "life rewards," such as the opportunity to play with a coveted toy.

As in every field of dog training, however, some of the trainers we spoke to hold fast to the notion that corrections are necessary during training, especially during the foundation "obedience" phase, in order to achieve reliability. The idea that there must be "consequences" for objectionable behaviors is difficult for many old-fashioned trainers to get past.

In contrast, we have found that the use of "negative punishment" (the removal of a desired object or outcome to decrease unwanted behavior) is a gentle but effective consequence that, in combination with positive reinforcement, can produce very dependable work dogs.

Carole Schatz, Certified Pet Dog Trainer and training director for a study at Scripps Research Institute's General Clinical Research Center for canine detection of cancer, told us why she uses primarily positive reinforcement in her training and sought out trainers with a similar training philosophy to participate in the study:

Carole Schatz and Josie.

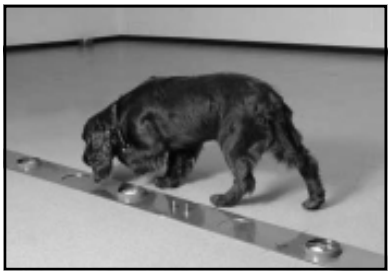
"In the 1960s I was a reading teacher," Schatz says. "My kids learned the fastest because I bought pretzels. Each child was tested daily and if they learned the lesson, they earned a pretzel. My kids were always the first ones to learn to read. Thus, when I went into dog training in 1975, I was completely open to using positive rewards – goodies. It was lonely until I met Dr. Ian Dunbar in 1978 and traveled to his classes and seminars. Here was validation.

"I love it when the dogs learn fast and have fun doing it. It also gives me great pleasure to see their happiness. It's win/win. Using punishment makes the dog fearful and unhappy and then I'm unhappy. It also takes longer because you have by-products of fear and confusion.

"The training methods involved in this study are no different than training anything else – ignore the wrong and reward what's right. My goal is happy dogs who love what they're doing and happy trainers. Alerting to cancer is frosting on the cake."

with bladder cancer. The results of a double-blind test of the dogs at the conclusion of a seven-month training period showed the dogs successfully alerted to the urine of patients with bladder cancer 41 percent of the time (14 percent would represent a random response).

The researchers involved with the study, including trainers from Hearing Dogs for Deaf People and medical researchers from the Erasmus Wilson Dermatological Research Fund, feel they have not only demonstrated the promise of this form of cancer detection, but also designed a successful training protocol and stringent controls in the testing phase suitable for extending the work. Their future goals are to optimize the experimental process and to study the potential for dogs to detect other types of cancers, particularly skin cancer.



Tangle, a spaniel in the Erasmus Wilson cancer detection study (in England), checks each one of six samples; one contains urine from a cancer patient. She has been trained to alert her handler when she finds the cancer patient's urine by lying down in front of the appropriate sample.

Photos courtesy of Erasmus Wilson Dermatological Research Fund.

A study that will be conducted in this country at Scripps Research Institute's General Clinical Research Center is still in the development stages. Trainer Carole Schatz and Dr. Robert Gordon are collaborating with Dr. Larry Myers, canine scent expert and professor of veterinary medicine at Auburn University in Alabama. The Scripps study will attempt to teach 12 dogs to alert to an odor signature in the urine of patients with prostate and breast cancer. One of these dogs is Schatz' own two-year-old Golden Retriever/Poodle mix, Josie. Josie is already a certified assistance dog and a registered therapy dog.

The dogs in the Scripps program will be trained with various positive methods. "Every dog is an individual," says Dr. Robert Gordon, principal investigator for the Scripps study. "We have to learn which technique works best with each individual dog."

Dog trainers in the study are given latitude to experiment with their own training techniques to see what works best. Some are training their dogs to alert to the scent of vanilla. The alert signal is then transferred to the presence of the odor signature of cancer in urine. In a separate study being conducted by Dr. Myers at Auburn University, dogs are first trained to alert to the banana-like scent of n-amyl acetate, then transitioned to cancer cells.

One of the questions the researchers hope to answer is whether the cancer substances that are excreted in urine are universal to all cancers, or specific to individual cancers. For example, prostate cancer may be aggressive or nonaggressive, and there is currently no way to tell which is which. If dogs could be trained to distinguish the difference, it could make a big difference in how the cancers are treated.

"There is real scientific, humanistic value in this project," Dr. Gordon says excitedly. "If this project proves out, we could train teams to go places where modern diagnostic equipment isn't available. This could make a huge difference in the quality of peoples' lives."

In between training sessions, the cancer detection dogs live normal lives, or as Schatz says, "They are all pets."

Smelling weeds for a purpose

Kim Goodwin, a rangeland noxious weed specialist with Montana State University, contacted scent dog trainer Hal Steiner in 2003. She asked if he could train dogs to detect knapweed in the field, and Steiner agreed to give it a try. He selected a Rocky Mountain Shepherd (a breed he developed himself) to be the test dog for the project. The dog was so successful, he later dubbed her "Knapweed Nightmare."

Phase One of the knapweed detection program was successfully completed and field-tested in the fall of 2004. At completion of the testing, Nightmare was finding the nonnative invasive plant with a 93 percent success rate, proving that dogs can detect low densities of the invasive plant efficiently. Steiner sold Nightmare to the university, which is now seeking funding to continue the work.

Steiner, while still using primarily positive training methods for the scent work, takes a different approach. From the time his professional working dogs are born, they never "play" the way a companion dog might.

"She's not a pet; she's not played with," Steiner says of Nightmare. "We start with basic obedience training, using corrections if necessary. Then, using 'game theory,' we addict the dog to a certain type of toy, in Nightmare's case a towel or piece of plastic tubing with knapweed wrapped inside. When she's not working, she's in her pen."

Handlers in Steiner's program praise the dog – no food rewards – when she reacts to the scented toy. Steiner then hides the toy in places that are progressively harder to sniff out. As Nightmare becomes proficient, the trainers add distractions, to teach her to stay focused on her task.

The Rocky Mountain Shepherd was also trained to indicate her finds by digging at a spot of knapweed for 10 seconds so the global positioning system (GPS) attached to her collar could mark the location of a knapweed find.

"You don't want bomb dogs digging aggressively at a package of explosives," Steiner chuckles. "We want them to indicate finds gently. But Nightmare needed to stay in position for 10 seconds (for the GPS unit to record the spot), and the easiest way to get her to do that was to encourage her to find aggressively, by digging at the spot for a bit, then moving on. Humans check the spot later to confirm the find."

Home inspection

David Latimer tells us that dogs have been doing termite detection for at least 20-25 years in the U.S. Mold detection developed originally in Europe about 10 years ago. Latimer uses positive reinforcement, and acknowledges the importance of timing when rewarding desired behaviors. He also subscribes to what he calls "fair and just discipline" as a part of training dependable working dogs.

Among other training exercises, Latimer uses a "scent board." This is a piece of 2x4 with eight, 4- to 6-inch sections of PVC pipe attached vertically, secured with screws to the board. Each section of pipe is capped with a screw-on cap to conceal the contents; the caps have small holes drilled through the center to release the scent. The target odor – termite-infested or moldy material – is placed inside one or two of the pipes, and

distracting odors are placed in several of the other pipes. In order to earn a reward, the dog must correctly identify which pipe or pipes contain the target odor.

Pet detecting

Kat Albrecht says that the use of dogs specifically for finding lost pets goes back to the 1970s, when a Bloodhound handler in Texas used his dogs to search for missing dogs. This trainer reportedly died in the early 1980s, and while an occasional search dog may have been used for this purpose since then, no one until Albrecht has attempted to do it on a large, formal scale.

Today Albrecht is the founder of Pet Hunters International, the world's first pet detective academy, and Missing Pet Partnership, a nonprofit organization that provides training for animal welfare organizations and conducts research into the behavioral patterns of lost pets. Albrecht is also the author of *The Lost Pet Chronicles,* a nonfiction book about her work.

One of Kat Albrecht's "MAR Cat Detection K9s" plays with one of the training cats, her reward for finding the hidden cat.

For cat detection dogs, Albrecht conceals gregarious, dog-friendly cats in a crate in some shrubbery, and rewards dogs for responding to the scent of the cat. Dogs are reinforced for giving a physical alert to the presence of the cat, then encouraged to run back to and jump on the handler, then do a "re-find" by taking the handler back to the crated cat, where they are rewarded. The reward in this case is treats plus the opportunity to play with the uncrated, harnessed and leashed cat.

For the specific scent training, Albrecht uses a clicker to teach dogs to search for treats by sniffing a sterile gauze pad that contains the matching treat scent. She progresses to hiding baby food jars with various scents, and uses the gauze pad to teach "smell this smell, find this smell."

Her dog-trailing dogs are trained using a modification of the method used to train Bloodhounds to follow the scent trail of a human, only using a scent article from a "target dog." The reward for the scent dog is to play with the dog he finds!

Success stories

Latimer likes to tell about one of his handlers who was called to do a real estate purchase inspection on a lake house, and had the dog alert on an area outside the home. "Upon investigation," Latimer relates, "the handler found that extensive termite damage had been cosmetically concealed prior to his arrival. Apparently another company had found the termite infestation on an earlier inspection, and the homeowner tried to conceal it from the handler in order to get a termite clearance."

David Latimer's termite- and mold-detection Beagles have helped save thousands of homebuyers' dollars.

Albrecht's favorite story included the participation of her cat, Yogi, as an impromptu pet detective. As Albrecht walked out of her house one morning, she noticed Yogi sniffing a spot in the road, unusual for the cat, who was normally terrified of the roadway. That evening, when Albrecht's neighbor mentioned that *her* cat, Rocky, was missing, Albrecht remembered Yogi's unusual behavior.

Albrecht took her Weimaraner, Rachel, a retired cadaver dog, out to look for blood in the roadway. Rachel urinated on the road – her somewhat unorthodox alert indicating that she'd found decomposing blood or tissue. Her find suggested to Albrecht that the cat was injured, not just lost or stolen, which prompted her to suggest the owner focus her search within the cat's territory.

"Sure enough," says Albrecht, "Andrea found Rocky under his deck, one back leg hanging by a thread, but alive. Rocky is now a happy three-legged kitty who was saved because of his curious neighbor cat and a trained search dog."

As these programs gain momentum, and as trainers develop more programs that use our dogs' incredible sense of smell, we will no doubt hear of more exciting ways that dogs can demonstrate their value. Most exciting to us is the comment of many trainers, that "any dog" can do scent work. That means you and your dog can do it too! Remember, if it has a scent, a dog can be trained to find it. The possibilities are endless.

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. *For book purchase or contact information, see "Resources," page 24.*

Scent Dog Training Resources

If you're as excited as we are about the potential for these programs and the opportunities for every dog to participate in them, check out the resources below. Decide what interests you, and get involved!

MARK9 Certification Programs: Kat Albrecht has developed a training and certification program to certify dogs and handlers as lost pet detectives. The first of these courses will be offered at the Peaceable Paws 80-acre training campus in Hagerstown, MD. Contact Pat Miller at peaceablepaws.com for information on the Maryland course, or go to pethuntersinternational.com for more information on other classes. You can also reach Kat Albrecht at (559) 292-4334; or visit katalbrecht.com

Mold and Termite Detection: David Latimer, FSI K9 Academy, (877) 414-3473 or thescentdog.com

Knapweed Detection/Eradication: Hal Steiner, Rocky Mountain Command Dogs, (406) 388-1197 or rmcd@avicom.net

Cancer Detection: Carole Schatz, CPDT, (619) 462-4077 or cbschatz@webtv.net

Matters of the Heart

Dog owners have many tools to promote their dogs' cardiac health.

BY RANDY KIDD, DVM, PHD

A dog's cardiovascular system is physically and mechanically an incredible assemblage, and its capabilities are almost mystical – literally and figuratively driving the dog's vital force. However, there are several conditions that can adversely affect the heart in a small percentage of dogs (a much lower percentage than that of humans with heart or vascular disease).

Fortunately, there are also several good, natural, and alternative approaches that can be used to treat canine cardiovascular disease. In my experience, these treatments have been as effective (and safer) than the Western medicine treatments I once used.

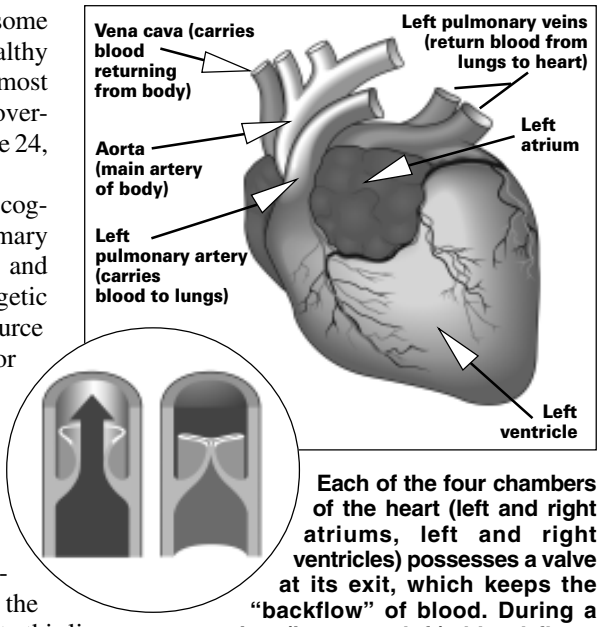
Ways to think about the canine cardiovascular system

Conventional Western medicine views the heart as a simple mechanical pump – a very complex piece of machinery with a simple function as a pumping machine. Other scientists have studied the heart from the perspective of its bioenergetics – studies of the bioelectrical and biomagnetic fields are often centered in the heart, and scientific advances in these areas have led some practitioners to conclude that healthy "cardio-energetics" may be the most important contributor to vibrant overall health. (See "Resources," page 24, for more on cardio-energetics.)

Many holistic practitioners recognize that the heart is also a primary source of the body's bioelectric and biomagnetic fields. These energetic fields may be the body's major source of inner information, necessary for proper functioning of the immune system and other organ systems.

Energy fields may also be responsible for much of the body's ability to create cellular, organ-related, and whole-body memory fields that are in turn connected to other animals and to the natural environment. According to this line of thinking, since the heart is the primary producer of bioelectric and biomagnetic fields, it may be the organ with the highest intelligence in the form of memory. And the heart is almost certainly the organ that has the most potential for interconnecting with other animals (including humans).

Finally, we now know that the heart's energetics extend into the surrounding environment almost infinitely. Some traditions have said that it is this heart connection – man to beast – that is the reason the animals were sent here in the first place.



Each of the four chambers of the heart (left and right atriums, left and right ventricles) possesses a valve at its exit, which keeps the "backflow" of blood. During a contraction (inset, on left), blood flows through the valve, pushing the valve flaps open. After the contraction (inset, on right), the back pressure of the blood forces the flaps of the valve shut. The closing of the pairs of valves is forceful enough to create the heart's familiar "lub-*dup*, lub-*dup*" sound.

Pump and supply line

Okay, enough of theory. Mechanically, the heart consists of two pumps, located side by side and joined along their entire length. Each of these muscular pumping stations is comprised of two chambers, the atrium and ventricle. The atria, located at the cranial part of the heart (nearest the head), are primarily receiving chambers where the blood from veins is collected before its passage into the ventricles. Separating each atrium from its adjacent ventricle is a one-way valve consisting of two or three leaflets, or cusps. The valve on the left has three cusps and is called the tricuspid valve. There are two cusps on the valve between the chambers on the right side of the heart, close together in a shape that resembles a bishop's miter (thus it is called the mitral valve).

The right side of the heart supplies blood to the lungs where the oxygen from outside air is added and carbon dioxide from cells is expired. This part of circulation is a relatively short course, thus the right side of the heart is not as muscular as the left.

After being aerated by the lungs, the blood circulates into the left atrium (via the pulmonary vein). Then, through the tricuspid valve, it enters the left ventricle. From here the muscles of the ventricle propel the blood through miles of vessels, beginning at the aorta. The heart must not only have enough power of contraction to propel the viscous fluid though miles of vessels, but

The Whole Dog Journal™

WHAT YOU CAN DO . . .

- **Have your dogs examined by a holistic veterinarian annually. Discuss any and all nutritional supplements with him or her.**
- **Make sure your dog exercises daily, for at least 20-30 minutes.**
- **Feed your dog a food that contains the highest-quality protein you can afford.**
- **Two words: Hawthorn tea.**

also maintain a constant beating, as they say, 24/7 for the lifetime of the animal.

There are several factors that control heart rate and rhythm. The sinoatrial (SA) node, located in the muscles of the right atrium, instigates the electrical flow that initiates contraction and propels it across the heart. (Surgically implanted artificial pacemakers can be used to stimulate the SA node when necessary – and yes, this surgery has become relatively common in dogs.)

Heart rate is also under biochemical influence. Stimulation of the sympathetic nervous system (with epinephrine or norepinephrine, for example, either provided via injection or from the natural "flight or fight" mechanisms) results in increased heart rate; parasympathetic stimulation slows the heart. Heart rate is also inversely related to systemic blood pressure – when blood pressure increases, heart rate decreases, and vice versa. Blood pressure is further controlled by chemicals (angiotensins) that operate at the kidney to conserve or eliminate fluids in the urine.

Heart sounds

The heart has a voice of its own, and the audible dictation of the cardiac voice is easily heard. The closing of each set of valves is forceful enough to make a slight thupping sound, which is easily heard by placing your ear on your dog's chest. The first of the thups issues from the tricuspid and mitral valve closures and the second from the pulmonary and aortic valves (the egress valves that prevent regurgitation of blood back into the chambers). The thups create the familiar "lub-*dup*, lub-*dup*, lub-*dup*" sound we are all familiar with.

With a low-tech ear-to-the-chest method you can detect obvious murmurs, which I would describe as a "mushing" or "slushing" of the lub-*dup* sound. Heart sounds are, of course, more apparent when a stethoscope is used to amplify them. Electrocardiograms, echocardiograms, and MRIs may also be employed for capturing the best possible "sound" of the heart.

Pulse of the pooch

A normally functioning cardiovascular system should pump blood to all areas of the body with equal force and rhythm; an animal's pulse is a reflection of the overall health of the system.

Pulses are especially important in Eastern medicine. Traditionally, the character of the wrist pulse is examined and correlated with a diagnosis that then indicates a direction for treatment. The pulse is taken with three fingers, and three depths of pressure are used for the final determination that combines the nine "readings" into a comprehensive diagnosis.

Our dogs don't have a good "wrist" site for pulse readings, but some veterinarians have substituted the carotid artery (in the neck) and/or the femoral artery (on the inside of the hind leg) for the traditional wrist readings. My own take on this is that we don't yet have enough information on these "new" sites to be certain they are giving us readings that are accurate for diagnosis, and I know for a fact that my fingers are not trained well enough to feel the subtleties that a Chinese-trained practitioner has learned with decades of practice.

Electrocardiograms

Muscle activity requires a transfer of ions from outside muscle cells into their interior; as these ions are transferred across the cell wall, a minuscule electrical charge is produced. An electrocardiogram (ECG or EKG) records the electrical potential, generated by the electric activity of the heart, taken from electrical leads placed on the surface of the thorax and body extremities. Thus the ECG represents the extracellular electric behavior of the cardiac muscle tissue.

ECGs have become a relatively common form of diagnostic aid, available in many veterinary hospitals. Dog and human ECGs are obtained in the same manner – you get the patient to relax, hook her up to several leads that are connected to the ECG recording machine, take readings on a moving graph paper for several minutes, and interpret the readings.

The heart's "beat" is created by an electrical activation sequence that proceeds, in a self-propagating wave, from the muscles of the apex of the heart to the muscles at the base. Abnormalities can be detected in the frequency and amplitude of the electrical waves, in the spacing between segments, and in the character of the segments and waves.

However, ECG interpretations are notoriously inconsistent; not even the most skilled interpreters (Board Certified cardiologists) agree with regularity. Numerous studies have shown that family practitioners fail to properly diagnose a high percentage of ECG readings. Also, correspondence between computer models of readings, cardiologists, and general practitioners is not good. I know of no studies that evaluate the reader accuracy of veterinarians, but my guess is that we would fare no better than our physician counterparts.

To summarize, I think it is more important that the practitioner has the ability to get his nose out of the machinery and look at the whole animal. And, until I've been able to evaluate the animal's condition – including his energetics – I always take machine-based results with a grain of salt.

Symptoms of heart disease

Common symptoms of heart disease include exercise intolerance; persistent, low-grade coughing; reluctance to move; difficulty breathing or forced respirations; poor blood perfusion (delayed capillary refill time or cyanosis with exertion); and, the animal may sit with his elbows out. Remember that these are the same or similar to the symptoms seen with respiratory disease; it is important to separate these two conditions.

Common heart diseases

Heart disease is the number one killer of humans. In dogs, however, heart disease is not nearly so prevalent, affecting only about 10 percent of all dogs. Furthermore, the most common types of heart disease in dogs are not the same as the typical heart conditions in people. Following are some of the more common types of canine heart disease.

Congenital heart disease is perhaps the most common heart disease in dogs with an overall rate of affected animals around 1 percent of the total population. Many diseases such as cardiomyopathy and degenerative valvular disease of small breeds of dogs may have a significant heritable component.

Almost any physical part of the heart may be defective at birth. Symptoms vary with the location of the defect, but most often can be detected by listening for a murmur. The murmur may be characteristic for the type and location of the defect, or more likely, ECGs or other diagnostic aids will be needed to pinpoint the problem. Many animals with defects (and audible murmurs) live a quality life without any signs that a problem exists; others may require surgery to repair the defect.

Valve and endocardial diseases can be caused by any number of conditions including genetic abnormalities; aging, worn valves; and infections (many valve conditions can be traced back to gingival infections; as we advised in "From the Mouths of Dogs," December 2004, it's important to keep your dog's teeth clean).

Adult **heartworms** can mechanically

interfere with heart valve function. Anytime a heart condition is diagnosed, ask your vet to test for heartworm adults and larvae.

Myocardial disease is also a condition with any number of potential causes including hereditary, nutritional, and infectious. Dilated cardiomyopathy can, for example, be due to a carnitine (an amino acid) deficiency in some dogs that apparently inherit an inability to properly metabolize carnitine. Parvovirus and certain drugs can also induce dilated cardiomyopathy.

Today's most common form of dilated cardiomyopathy affects only large breed dogs, and tends to be an acute problem that occurs in middle-aged dogs. In this disease, cardiac contractile function is lost, cardiac output decreases, the body compensates by stimulating the sympathetic nervous system – which tries to inappropriately increase heart rate, ultimately resulting in arrhythmias and/or heart failure.

Congestive heart failure can also be caused by a number of conditions. Regardless of the cause of heart disease, the body reacts to a decrease in cardiac output by activating the sympathetic nervous system (increasing heart rate and cardiac contractibility), constricting vessels, and activating the biochemical system (angiotensin) to retain fluids and increase blood pressure. While these mechanisms are life-saving in the short term, if they become prolonged, they produce undue stress for the heart muscle. Unchecked, conditions that affect the function of the heart may ultimately lead to complete or congestive heart failure.

Arrhythmias are abnormalities of cardiac impulse formation, conduction, rate, and regularity. Their causes include poor nutrition, genetic defects, problems with electrical conduction across the myocardium, and biochemical disturbances. Quiet, healthy dogs have a heart rate that is slightly irregular, so diagnosing true arrhythmias requires an ECG or other diagnostic aids, and any diagnosis needs to be correlated with clinical signs – if they exist.

Conventional treatment

Your conventionally trained vet will be able to tell you a *lot* about Western veterinary care for your dog's heart condition – especially if she or he has graduated from vet school in the past decade – so I won't use much space discussing conventional care. Conventional Western treatment for cardiac conditions, of course, depends on the condition, but a normal protocol would include some or all of the following:

- Diuretics – to remove excess body fluids present because the heart isn't moving them along properly.

- Digitalis (or digoxin) – to improve heart function

- Vasodilators – to lower blood pressure. Nitroglycerine might be the drug of choice here, or others may be selected.

Alternative care for the heart

While Western medicine requires a definitive diagnosis before a proper treatment protocol can be initiated, most alternative medicines are prescribed for symptoms. Furthermore, most of the natural and alternative remedies used have a wide range of effectiveness for many conditions, and they are typically safer (although perhaps not as potent) as conventional drugs.

Heart-healthy nutrition

The best preventative "medicine" you can provide for your dog is heart-healthy nutrition. The cardiac-impaired patient should be on a well-balanced diet that helps maintain his ideal body weight. If your dog is overweight, a mild reduction in food intake is recommended – about 80 to 99 percent of caloric maintenance levels. Ideal weight reduction would amount to a slow, steady weight loss of 1 to 3 percent of total body weight per week. For specifics on a weight-loss program, see your vet.

Many heart patient dogs are older animals who also suffer from kidney and/or liver disease. Years ago, very low-protein (14 to 15 percent) diets were automatically prescribed for dogs with kidney or liver disease, as *high* protein diets force the kidney and liver to work overtime. Unfortunately, some of these animals, particularly those who are on this diet long term, may develop malnutrition. Today, we prescribe a diet with a slightly higher level of protein, with a special emphasis on the protein's quality (high biologic value) and digestibility for these dogs.

Dogs with severe and chronic heart disease may also show signs of protein-energy malnutrition, seen as loss of both fat and lean body mass ("cardiac cachexia"). A diet containing high-quality protein will help prevent this condition. B vitamins, choline, and inositol are good supplements to help maintain a healthily functioning liver.

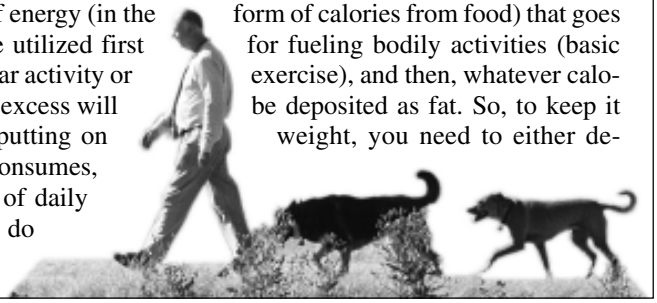
Diets high in salt may increase blood pressure, which in turn adds to the physical stress to the heart. Low salt diets that include 0.05 to 0.5 percent (dry matter) sodium are indicated for the canine cardiac patient. In addition, stop sharing any salty human treats such as potato chips, pretzels, processed meats, canned fish and vegetables, and cheeses. Many commercial dog treats also contain high salt levels, so check the label for salt content when feeding or treating your cardiac-compromised canine.

Whenever we supplement the diet, the most important consideration is to maintain a balance of nutrients. One of the first things I do with new clients is to look at the supplements they already give their dogs. Invariably, there are several products that contain the same or similar nutrients. Overdoses of *any* substance can be dangerous. And digestion, assimilation, and metabo-

Exercise the Dog, Strengthen the Heart

Oxygen is at the top of the list of nutrients needed by a healthy heart, and exercise is the way to be sure your dog's myocardium (heart muscle) gets a generous supply. All dogs should have at least a daily 20- to 30-minute aerobic trot-along and a few heart-stimulating romps (after having his heart vet-checked as okay), along with several additional trips to the fireplug during the day.

The second best "medicine" for your dog's heart is an environment that helps him keep from getting fat. Basic metabolism isn't all that difficult to understand: Whatever the amount of energy (in the form of calories from food) that goes into the body, it will be utilized first for fueling bodily activities (basic metabolism and muscular activity or exercise), and then, whatever calories that are left over as excess will be deposited as fat. So, to keep it simple, if your dog is putting on weight, you need to either decrease the calories he consumes, or increase his amount of daily exercise – or better yet, do both!



lism often depend entirely on the overall balance of several independent nutrients. Talk to your vet; don't just "wing" it!

Human patients with chronic cardiac failure are frequently deficient in iron, zinc, magnesium, potassium, chloride, and B vitamins. Although similar problems are not well documented in dogs, B-vitamin supplementation is recommended, provided in a **balanced vitamin-mineral supplement.** Vitamin E (along with a balanced level of selenium) has been shown to be beneficial for heart muscles in many people, and vitamin C has healing activity and helps maintain the integrity of the heart walls and blood vessels.

Some types of diuretics cause decreased levels of potassium (hypokalemia), which predisposes the patient to digitalis intoxication and to cardiac arrhythmias. If your dog receives a diuretic medication, check with your vet to see if potassium supplements are recommended. Also see dandelion (in the herbal section, below) for a natural diuretic that restores potassium levels.

At least two **amino acids,** taurine and carnitine, have been directly implicated in heart conditions in some species. There is evidence that carnitine may be involved in occasional canine heart problems.

L-carnitine (the bioactive form) is similar to the B vitamins, and its main function is to help transport fatty acids, which are then burned within cells to provide energy. Carnitine deficiency is usually the result of genetic factors that cause the patient to require higher amounts of carnitine than normal. Deficiencies at the cellular level may contribute to some types of muscular problems including muscular dystrophy and cardiac myopathy.

The normal dog's body can manufacture carnitine if sufficient amounts of iron, vitamins B-1, B-6, and C and the amino acids lysine and methionine are available. Carnitine is naturally available from meats and other animal-origin foods.

Coenzyme Q-10 (Co Q-10) is a vitamin-like antioxidant substance whose actions in the body resemble those of vitamin E. Co Q-10 plays a critical role in the production of energy in every cell of the body, aids circulation, stimulates the immune system, increases tissue oxygenation, and has anti-aging effects. It also counteracts histamine and is thus beneficial for treating allergies, asthma, arthritis, or respiratory disease. It has been shown to be effective in reducing mortality in experimental animals afflicted with tumors and leukemia, and it may reduce the side effects of cancer chemotherapy.

Co Q-10 has a great impact on heart tissue, and it has become *the* supplement to consider for treating and preventing heart disease. Its mode of action is to strengthen the heart muscles, and it has proven beneficial (in humans) for treating congestive heart failure and high blood pressure. It is thus used for almost any heart condition.

Natural sources high in coenzyme Q-10 include mackerel, salmon, and sardines, and it has also been found in beef, peanuts, and spinach. The amount of Co Q-10 present in the body declines with age, so the aging dog is a prime candidate for supplementation. It is oil soluble and should be taken with oily or fatty foods.

Fatty acids are the basic building blocks for fats and oils. Those that can't be made by the body and that are necessary for health are called **essential fatty acids** (EFAs). Every living cell of the body requires EFAs for rebuilding and producing new cells. They are also involved in the production of prostaglandins, the chemical messengers and regulators of various body processes. In addition, EFAs are beneficial for healthy skin and hair, for reducing blood pressure, as an aid in the prevention of arthritis, for lowering cholesterol, and to reduce the risk of blood clot formation.

The two basic categories of essential fatty acids are Omega-3 and Omega-6. Omega-3 EFAs include linoleic and gamma-linolenic acids; they are found in raw nuts, seeds, and legumes and in unsaturated vegetable oils from borage, grapeseed, primrose, sesame, and soybeans. Omega-6 EFAs, including alpha-linolenic and eicosapentaenoic acid (EPA) are found in fresh deepwater fish, fish oil, and certain vegetable oils including canola, flaxseed, and walnut. Note that these oils need to be consumed in liquid form, they don't tolerate heat, and they are subject to spoilage.

Once again, *consult with your holistic veterinarian* to ascertain proper dosages of any supplements. Dosages should vary for each individual patient and will depend on whether maintenance or therapeutic dosages are desired. Also, you should be absolutely certain you provide the supplements in a balanced format for proper absorption, assimilation, and metabolism, and for correct interaction with other supplements.

Herbal remedies

Herbal medicine has much to offer canine cardiac patients. Most herbal remedies convey mild, supportive care without appreciable adverse side effects.

Hawthorn *(Crataegus oxyacanthoides)* is the queen of all cardiac tonics, with ample scientific evidence to justify its claims. Hawthorn has many beneficial effects on the heart including enhancing oxygen utilization by the heart muscles; improving blood supply to the heart by dilating the coronary arteries; improving metabolism in the heart, which increases the heart's force of contraction; helping stabilize cardiac activity, thus eliminating some types of rhythm disturbances; and reducing blood pressure.

In short, hawthorn acts on the heart in a normalizing way, by either depressing or stimulating the heart's activity, depending on the need. It is thus an excellent herb to consider whenever a general tonic is needed for the circulatory system. It is used for treating heart failure or weakness, congestive heart failure, arrhythmia, and high blood pressure (due to its tonic activity, it will normalize high or low blood pressure).

In addition, hawthorn helps stabilize collagen, perhaps via its synergistic activity with vitamin C. Collagen stabilization helps make capillaries less permeable and fragile. Hawthorn reduces destruction from any inflammatory process such as periodontal disease, arteritis, and arteriosclerosis. It can thus be used as an aid for treating the cartilage deterioration and ligament instability associated with arthritis.

Compared with digitalis, in general, hawthorn is safer and milder in activity. Digitalis has a direct action on the heart; hawthorn lowers blood pressure by dilating the peripheral vessels, thus preserving critical reflexive blood pressure regulation. Hawthorn does not cause the cumulative effects that occur with digitalis.

Hawthorn can be used by itself or in combination with digitalis, where it has a synergistic effect. With the combination, your practitioner may be able to lower the digitalis dosage to about one-half the normal dose. Further, the herb may partly ameliorate undesirable effects of digitalis.

Hawthorn toxicities have not been reported, although you should use caution if it is being used along with digitalis, and at least one report recommends that it not be used along with beta blockers as it may antagonize them.

I like it that hawthorn was once considered a sacred herb. Hawthorn has long been

Short Shrift for Traditional Eastern Medicine?

If the entire "Tour of the Dog" series I've been presenting in WDJ for the past few months was written exclusively from the perspective of Eastern medicine, it would have been just as long as it is. I find the language, history, and even current research of the traditional Eastern medical practitioners to be useful, insightful, *and* quite complementary to my Western medical training. However, trying to convey even just the key points of Eastern medical theory or treatment alongside the other modalities I describe is impractical, especially since almost every term needs to be defined in order to be understood.

Traditional Eastern medical diagnostic procedures and courses of treatment for any given condition will differ from those of Western-oriented practitioners, but can be equally effective. Dog owners who are interested in this type of medicine can consult books such as *Four Paws, Five Directions* by Dr. Cheryl Schwartz; *Veterinary Acupuncture* by Dr. Allen Schoen, and *The Well Connected Dog: A Guide to Canine Acupressure* by Nancy Zidonis and Amy Snow.

recognized as a healer of that part of the heart that is not simply mechanical or biochemical – a healer of the spirit and soul that may reside within our hearts.

Motherwort *(Leonurus cardiaca)* is an excellent herb often found growing as a weed along fence rows or at the edges of lawns. Motherwort has three primary actions: as a cardiac tonic; sedative and antispasmodic; and as a tonic that helps stabilize the female reproductive tract. It is thus indicated for all heart conditions, but especially for those that are associated with anxiety and tension. It is often used to treat increased heart rates.

Motherwort has been shown to improve metabolism in the heart, reduce heart rate, increase coronary perfusion, inhibit platelet aggregation, and may cause mild hypotension. Sensitive people may develop a contact dermatitis from the plant, but other toxicities have not been reported.

If the heart is not functioning properly, fluid can build up in the lungs, causing respiratory distress. Enough of a fluid backup can cause edema (water collection at various parts of the body). **Dandelion root** *(Taraxacum officinale)* is an excellent diuretic and general tonic, and has beneficial activity for the liver and gall bladder. In animal studies, dandelion has proven to be a strong diuretic, comparable to the action of the drug, furosemide. However, while furosemide depletes potassium from the body, dandelion, with its high levels of potassium, re-supplies it naturally. Dandelion is a very safe herb to use; virtually no adverse side effects have been reported.

Cayenne (red or chili pepper, *Capsicum spp.)* is probably the most useful of the systemic stimulants, regulating blood flow and equalizing and strengthening the heart, arteries, capillaries, and nerves. Cayenne is a general tonic and is specific for the circulatory and digestive systems. It has the ability to balance blood pressure, correcting it to a normal range.

As a stimulant, it can be used any time an animal is debilitated – whenever the circulation is stagnant or there is congestion in the body and whenever there is a lack of energy or vitality. Cayenne is also an outstanding carrier herb, helping in the transport of other herbs and medicines to various parts of the body, but especially to the heart, stomach, and brain. Very high doses over long periods *can* cause internal problems such as chronic gastritis, kidney and liver disease, and neurological effects.

I find that many pets (cats included) really like food seasoned with a pinch of one of the many kinds of cayenne, and since there are at least 1,700 different pepper varieties, you should be able to fine one that your dog enjoys.

Other heart-healthy herbs to consider:

- **Yarrow** *(Achillea millefolium)* is a standard herb for treating fevers, and it is used externally as a wound-healing aid. It also lowers blood pressure and tones the blood vessels.

- **Rosemary** *(Rosmarinus officinalis)* has long been considered to be an effective memory aid, and it is used to stimulate the appetite and to promote digestion. It also stimulates blood circulation, and it is a good tonic herb for the aging dog.

- **Ginkgo** *(Ginkgo biloba)* improves brain function by enhancing blood flow to the brain, stabilizing cellular membranes, and improving oxygenation of tissues. These cell-level activities may also be directly beneficial to heart tissues.

Homeopathy and the heart

Homeopathic remedies are used to treat the symptoms of disease, and several have been used to help with heart conditions. **Crataegus** may used in cases of heart weakness and also for irregular heartbeat, myocarditis, and edema. For arrhythmia **Convallaria** is a good choice, and for valvular disorders **Adonis vernalis** may be helpful. **Rumex** may be helpful for the long-standing heart disease in older animals, and **Spongia tosta** is also a good remedy for chronic cases where the respiratory pattern is gasping and violent.

Flower essences

Flower essence remedies are used to alleviate emotional problems. Fix the emotions, the theory goes, and the physical problems will also clear up. Flower essences that may be beneficial for heart problems include **mimulus** (also a remedy to restore courage in the animal that has a fear of known things or is shy or timid); **oak** (the remedy that restores resilience, endurance, strength, and stamina, and is especially indicated for dogs dealing with chronic and serious heart disease); and **Rescue Remedy** (the emergency remedy to be used for any acute event that may be related to the heart).

Improving matters

No matter what medical approach we take to try to help the heart patient – whether it's Western, alternative, or a complementary mix – we may do no better than alleviating the worst of the symptoms. And if the problem is structural (a physical defect in the heart, for example), medicines will not fix the defect; the best we might accomplish is to enhance the dog's quality of life. However, in the case of debilitating cardiac conditions, that's a lot! As always, I suggest that guardians explore *all* their medical options for care and treatment of their canine companions.

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).*

The Whole Dog Journal™

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

TRAINING AND INSTRUCTION

The Association of Pet Dog Trainers (APDT) has references to member trainers in your area. Write to PO Box 1781, Hobbs, NM 88241, call (800) 738-3647, or view its database of trainers at apdt.com

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

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

CARDIO-ENERGETICS

For more information on cardio-energetics, see *The Heart's Code* by Paul Pearsall (Broadway, 1999), or earlier research findings by Drs. Gary Schwartz and Linda Russek. On the same topic, see also a book penned by a cardiac surgeon, *Healing from the Heart* by Dr. Mehmet Oz (Plume, 1999)

ENZYME/PROBIOTIC SUPPLEMENT

Animal Essentials' "Plant Enzymes & Probiotics Herbal Supplement for Dogs & Cats" is available from Animal Essentials, Carlsbad, CA. (888) 551-0416 or animalessentials.com

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The no-yelling solution to quiet your problem barker.

What a Wolf Eats

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