

# The Whole Dog Journal™



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A monthly guide to natural dog care and training

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# Pet Food Peeve

*Industry insiders talk a lot about the “humanization” of pet food.*

*That’s not why we recommend the foods we do.*

BY NANCY KERNS

**A** recent headline for an article on [petfoodindustry.com](http://petfoodindustry.com) read, “Thank goodness for the humanization of pets.” The article discussed how industry sales data and recent surveys of pet owners suggest that pet foods that are made to appeal to human appetites are responsible for most of the growth in the industry.

This isn’t the first time the phrase “humanization” has appeared in the pet food trade press. It’s used *a lot* – by industry analysts *and* pet food companies themselves. It’s just that the phrase isn’t often used in front of the ~~shills~~ – sorry, consumers – themselves. Pet food companies don’t make shelf displays that proclaim, “Now designed to appeal to *your* appetite, you silly dog owner!” even if that’s exactly what they are doing. Instead, they use the phrase only when they are talking among themselves.

For example, during Colgate-Palmolive’s second quarter earnings conference call for shareholders (held on July 28, 2011), the Senior Vice President of Investor Relations said, “Natural pet food is the fastest growing segment within the category as pet humanization and the inclusion or exclusion of specific ingredients are increasingly driving consumer behavior.”

Another example: Next month, there is a two-day conference presented by The Packaging Group, Inc. (“the world’s largest organization of targeted packaging conferences”), which “targets the emerging field of pet food packaging.” One of the two courses on the first day of the conference is devoted to “humanization of the pet food package.”

One could be insulted by the presumption that dog owners will buy a certain pet food just because its ingredient list sounds delicious, or because its package makes the food look perfectly scrumptious. But the truth is, it’s proving to be simple to manipulate many consumers by doing just that.

That’s why it’s so critical to inform yourself about your dog’s food. You have to go deeper than the pictures or words on the front label to determine whether a product is *actually* steak or just the “sizzle.” We try to teach dog owners about the ingredients panel and the guaranteed analysis – the only places on the label where one might gain meaningful information about the food. (Not that the ingredients panel is completely BS-free; there are plenty of tricks used there, too, to maximize the appeal of some perfectly ordinary ingredients.)

In the best possible world, ingredients that sound like real food items would appeal to educated dog owners because those ingredients *are* real food items – fresh, wholesome, and unprocessed. And that shouldn’t be a marketing strategy; it should be a basic pet care precept.

NK

**CORRECTION:** We failed to list contact information for our author Stephanie Colman when her articles appeared in the September issue. Colman wrote both “Talking About the ‘F’ Word (Frustration)” and Hell’s Nails: Symmetrical Lupoid Onychodystrophy.” In addition to writing, Colman also is a trainer, offering private and group classes in Los Angeles. Please see “Resources,” page 24 of this issue, for her contact information.



# Hates Crates?

## Five things to do when your dog refuses to get in or stay in a crate.

BY PAT MILLER, CBCC-KA, CPDT-KA, CDBC

**P**roperly used, the crate is a marvelous training and management tool. Improperly used, it can be a disaster. Overcrating, traumatic, or stimulating experiences while crated, improper introduction to the crate, and isolation or separation anxieties are the primary causes of crating disasters. If, for whatever reason, your dog is not a fan of the artificial den you've provided for him, and assuming he can't be trusted home alone uncrated, here are some things you can do:

**1** Find other confinement alternatives. Every time your crate-hating dog has a bad experience in a crate, it increases his stress and anxiety and makes it harder to modify his crate aversion. Your dog may tolerate an exercise pen, a chain-link kennel set up in your garage, or even a room of his own. A recent Peaceable Paws client whose dog was injuring herself in the crate due to isolation anxiety found her dog did just fine when confined to the bedroom when she had to be left alone.

**2** Utilize daycare alternatives. Many dogs who don't crate well are delighted to spend the day at the home of a friend, neighbor, or relative who is home when you are not, or at a good doggie daycare facility – assuming your dog does well in the company of other dogs. This is not a good option for dogs with true separation anxiety, as they will be no happier with someone else when they are separated from you than they are in a crate. (See "Scared to be Home Alone," WDJ July 2008.)

**3** Teach him to love his crate. Utilize a combination of counter-conditioning (changing his association with the crate from negative to posi-

tive) and operant conditioning/shaping (positively reinforcing him for gradually moving closer to, and eventually into, the crate) to convince him to go into his crate voluntarily. Then, very gradually, work your way up to closing the door with your dog inside, and eventually moving longer and longer distances away from your crated dog for longer and longer periods of time. (See "Crating Difficulties," WDJ May 2005). Note: If your dog has a separation/anxiety issue, you must address and modify that behavior before crate-training will work.

**4** Identify and remove aversives. Figure out why the crate is aversive to your dog. If he was crate-trained at one time and then decided he didn't like it, what

changed? Perhaps you were overcrating, and he was forced to soil his den, and that was very stressful for him.

Maybe there are environmental aversives; is it too warm or too cold in his crate? Is there a draft blowing on him? Is it set near something that might expose him to an aversive sound, like the washing machine, buzzer on a clothes dryer, or an alarm of some kind? Perhaps his crate is near the door, and he becomes overstimulated when someone knocks, or rings the doorbell, or when mail and packages are delivered. Is someone threatening him when he's crated – another dog, perhaps? Or a child who bangs on the top, front, or sides of the crate? Maybe he's been angrily punished by someone who throws him into the crate and yells at him – or worse. All the remedial crate training in the world won't help if the aversive thing is still happening. You have to make the bad stuff stop.

If he's a victim of generalized anxiety or separation anxiety and the crate aversion is part of a larger syndrome, or his stress about crating is extreme, you may want to explore the use of behavior modification drugs with your behavior knowledgeable veterinarian, or a veterinary behaviorist, to help reduce stress enough that he can learn to love his crate. Note – if your vet is not behavior knowledgeable, tell her that many veterinary behaviorists will do free phone consults with other veterinarians.

**5** Take him with you. Of course you can't take him with you all the time, but whenever you can, it decreases the number of times you have to use another alternative. Some workplaces allow employees to bring their dogs to work with them; you don't know until you ask. Of course you will never take him somewhere that he'd be left in a car, unattended, for an extended period of time, or at all, if the weather is even close to being dangerous. A surprising number of businesses allow well-behaved dogs to accompany their owners; if it doesn't say "No Dogs" on the door, give it a try! Your dog will thank you. 🐾





# You Can. You Should!

*High-quality wet dog foods – canned or pouched – are healthier than dry dog foods.*

BY NANCY KERNS

**W**et dog food is much more “natural” for dogs to eat than dry kibble. Its moisture content is closer to that of meats, eggs, fruits, and vegetables – the sort of things that canines have eaten for the tens of thousands of years before commercial dog foods were invented. Wet foods usually contain more animal protein – the optimum base of a carnivore’s diet – than even very high-quality dry foods. Even the varieties that are formulated with grain – not at *all* what dogs have eaten as they evolved – contain far less grain than dry foods.

Pound for pound, wet dog food is also more expensive to feed (especially large dogs) than dry foods. That’s because, with its high moisture content, the food is less “energy dense” than dry foods; you have to feed a larger volume of it to give your dog the calories and nutrients he needs. All that moisture is expensive to package and ship.

But the benefits of wet food are many. It’s therapeutic for dogs with kidney ailments, or any disorder that worsens if a dog gets dehydrated. Wet foods are generally far more palatable than dry foods, which can be a literal lifesaver when feeding very thin, sick, or picky dogs. Most dogs digest high-quality wet foods with fewer problems (gas, vomiting, and diar-

rhea) than dry foods. Wet foods also tend to be far less adulterated with synthetic ingredients than dry foods; artificial colors and flavors are rare in wet foods. And preservatives are not added to canned or pouched foods, since the oxygen-free packaging maintains their freshness. Even without preservatives, wet foods retain their nutrient value far longer than dry foods – two years or more.

## WDJ’S SELECTION CRITERIA

Because of all of these benefits, some holistic veterinarians are of the opinion that even a lower-quality wet food is healthier than good-quality dry foods.

We won’t go that far, because we like to see high-quality ingredients used in any food that’s fed to our canine companions. Not because we like to imagine that’s what we’d like to eat – the “humanization” marketing ploy – but because we know that diets comprised of a variety of locally sourced, fresh, unprocessed or lightly processed, unadulterated “real

**Here’s just a sampling of the top-quality wet dog foods that appear on our “approved” foods list. They range from high protein and super-high fat products to more moderately formulated foods.**



food” ingredients are healthiest for any living organism.

How do we determine whether a wet food contains these high-quality ingredients? There are two places on a product label we pay attention to: the ingredients panel and the “guaranteed analysis.” These sections of the label are required by law and tend to be subject to closer review and regulation by state feed control officials than the rest of the package.

We pay no attention to the pictures of the sort of ingredients that are purportedly in the food; they are almost never included in the form depicted on the label.

When looking at the ingredients list, we look for the following (these things are *good*):

■ **WHOLE MEAT, FISH, OR POULTRY AS THE FIRST INGREDIENT.** This means that by weight, there is more of this ingredient than anything else in the food. Wet foods are generally around 78 percent to 82 percent moisture.

There are *some* good wet foods with water (or broth) first on our “approved foods” list (starting on page 6), but since fresh meat is so high in moisture, most top-notch foods feature an animal protein (fresh meat) first on the list, and water or broth (required for processing) in the second or third position. The point is to look for products that contain as much meat as possible.

There has been a resurgence of popularity of complete and balanced wet foods that contain nothing but meat, water, and a vitamin/mineral supplement; many of these are labeled with a “95% meat” claim. Remember: while some dogs benefit from the inclusion of *some* carbohydrates in their diets, dogs have *no* dietary requirement for carbohydrates! They can thrive on diets that contain only protein and fat.

■ **IF GRAINS OR VEGETABLES ARE USED, WE LOOK FOR THE USE OF WHOLE GRAINS AND VEGETABLES.** This means we prefer foods that contain “rice” rather than rice flour, rice bran, brewer’s rice, etc. Also, if grains are used in a wet product, we don’t want to see a lot of them! Even a product with an animal protein first on its ingredients list may contain more grain than meat if it has several grains or grain “fragments” on the label, too.

■ **THE WORDS “COMPLETE AND BALANCED” SHOULD APPEAR ON THE LABEL.** Some manufacturers produce a few wet food products that are meant for “supplemental or intermittent” use only. These products do not meet the specifications for a “complete and balanced diet” as defined by the model regulations developed by the Association of American Feed Control Officials (AAFCO) and adopted by each state. While these “supplemental” foods may be useful as part of a varied diet, they can’t be relied on to provide all the nutrients your dog needs.

There are also a number of things we look *out* for – attributes that would cause us to reject a wet food product (these things are *bad*):

■ **PROTEINS OR FATS THAT ARE NOT IDENTIFIED BY SPECIES.** “Animal fat” and “meat proteins” are euphemisms for low-quality, ingredients of uncertain origin.

■ **MEAT BY-PRODUCTS OR POULTRY BY-PRODUCTS.** There is a wide range in the quality and type of by-products that are available to pet food producers. And there is no way for the average dog owner (or anyone else) to find out, beyond a shadow of a doubt, whether the by-products used are kept clean, chilled, and used fresh within a day or two of slaughter (as some companies have told us), or are comprised of ingredients that were literally swept off a floor, dumped down the floor drains at the processing plant, and kept for hours or days on unrefrigerated loading docks and trucks.

In recent years, we’ve learned that there is far more variation than we knew in the quality of even named, “whole” meats used in pet foods – the ingredients we’ve described for years as ideal. We were under the impression that whole, named meats were far too expensive to be handled in anything less than a similar fashion to meats meant for human consumption (the legal description is “edible”). We were wrong; we learned this when we had a chance to tour a raw ingredient (meat) plant. We’ll discuss this more in our review of dry foods (in our February issue). But in the meantime, all we can say is that the whole, named meats *tend* to be of higher quality and are more likely to be maintained in a clean, chilled state prior to processing.

■ **WHEAT GLUTEN.** Wet foods often contain some sort of thickener or binder. Various types of “gum” (such as guar gum, from the seed of the guar plant, and carrageenan gum, from seaweed) are common thickeners. Whole grains, potatoes, and sweet potatoes also can be used to thicken wet food. But wheat gluten (and some other glutes) are generally only used in wet foods to hold together artificially formed “chunks” meant to resemble chunks of meat – you know, those perfect cubes of meaty mush found in low-cost dog foods?

If chunks of meat are present in a wet dog food, they should be *actual* chunks of meat.

■ **SUGAR OR OTHER SWEETENERS.** A food that contains quality meats shouldn’t need additional palatants to entice dogs.

■ **ARTIFICIAL COLORS, FLAVORS, OR ADDED PRESERVATIVES.** Fortunately, these are rare in wet foods!

## OTHER INGREDIENTS

Some ominous-sounding chemicals in a dog food turn out to be a source of a needed vitamin or mineral. Generally, all the vitamins and minerals on a good label are grouped together at the *end* of the ingredients list. If an ingredient appears after the vitamins and minerals, it’s just “window dressing” – present in the food in a completely insignificant amount.

What about products that contain a long, long list of vegetables and herbs and nutraceuticals? They make a food sound *so* appealing! Just keep in mind that the more of all this stuff there is in a food, the less room there is for meat – the main reason to feed a wet food.

## LET’S TALK ABOUT MANUFACTURING SITES

Since the infamous recalls of 2007, we have required any pet food company that wanted its products considered for our approval to disclose their manufacturing sites. Having this information can vastly reduce the panic and uncertainty a dog owner may experience upon hearing of a pet food recall stemming from a certain pet food manufacturing facility; you would know immediately whether your dog’s food was involved or not.

Not all pet food companies will disclose this information, however. Many fear that if any product made at



that plant is recalled, their own foods will be “brushed” with the same tar reserved for the recalled products, even if their ingredients are procured and stored separately, and the production lines are well cleaned between their own manufacturing runs and those for other companies’ products. These are valid concerns. There are pet owners who, since the 2007 recalls of melamine-contaminated foods, have refused to buy anything that came out of a Menu plant (that’s the company that manufactured *most* – not all – of the recalled foods). (Note: those plants are now owned and operated by Simmons Pet Food, North America’s largest wet pet food private-label and contract manufacturer. Some of 2007’s recalled foods were manufactured at American Nutrition Inc.)

We’ve heard all sorts of reports of alleged misconduct at Evanger’s Dog & Cat Food Company. We’re also aware of a serious recall of foods made by Merrick Pet Care (in 2004).

You’ll notice that these three manufacturers (with 7 facilities among them) are responsible for making most of the products on our approved foods list; they are also responsible for making

almost all of the high-quality wet pet food in this country. The fact is, there are fewer than a dozen “contract manufacturers” (also known as co-packers) in this whole country that manufacture wet pet food for companies that don’t own and operate their own plants. (All the corporate giants have their own plants.)

No matter *where* a product is made, preventing the production of a product that will cause a recall requires the procurement and management of top-quality ingredients, good manufacturing practices, and scrupulous oversight and auditing of the manufacturing process. It’s far more effective to ask a pet food company about what it does to accomplish those tasks than it is to blacklist every product made in any facility that ever had a recalled food. With the exception of the brand-new plant launched by Lotus Pet Foods this year, we’re not sure there are any other plants with a perfectly clean record.

Finally, speaking of Lotus, we recently toured its facility and observed the production of a batch of its food. An article describing exactly how wet pet food is made (and photos of the process) appears on the WDJ website.

## THE LIST

Below is our list of “approved wet foods” for 2011. All of these products have met our selection criteria and the company whose name is on the label has disclosed its manufacturer/s. There are probably more products that both meet our criteria (as described above) and whose makers would answer your questions about their manufacturers. Rest assured that any food that you find that meets our selection criteria is just as good as any of the foods on our list.

**We’ve listed the foods alphabetically by company name.** Some companies make several lines of food. We’ve listed each line that meets our selection criteria. We’ve also highlighted *one* variety from each company as a representative product, to show what sort of ingredients and macro-nutrient levels (protein, fat, fiber, and moisture) are typically found in that maker’s foods. Rather than try to list *all* the ingredients in each food we highlight, we’ve listed the first 10 ingredients – the major components of the food.

Remember, quality comes with a price. These foods may be expensive and can be difficult to find, depending on your location.

## WDJ’S APPROVED WET FOODS OF 2011

Products highlighted in yellow are new to our list.

<b>ARTEMIS PET FOOD COMPANY, INC.</b> — Carson, CA; (800) 282-5876; artemiscompany.com	
<b>LINES/TYPES AVAILABLE</b> – <b>Fresh Mix</b> (3 varieties: beef, chicken, lamb); <b>Osopure</b> (3 varieties: chicken, duck, salmon).	<b>MADE BY</b> Evanger’s Dog & Cat Food Company, Wheeling, IL.
<b>REPRESENTATIVE VARIETY</b> – Osopure 95% Chicken contains: Chicken, chicken broth, guar gum, (vitamin/mineral premix) . . . 9% protein; 6% fat; 1.5% fiber; 82% moisture.	
<b>MISC INFO</b> – Fresh Mix varieties each contain fish as a second protein source, as well as carrots, peas, potatoes, and yeast. They are also higher in protein (9%) than the Osopure foods. Osopure foods have an extremely limited ingredient list. Also on the guaranteed analysis: calcium, phosphorus. Available in independent pet supply stores.	

<b>BLUE BUFFALO COMPANY</b> — Wilton, CT; (800) 919-2833; bluebuffalo.com	
<b>LINES/TYPES AVAILABLE</b> – <b>Blue Basics</b> (3 varieties, including 1 for large breeds); <b>Blue Family Favorite Recipes</b> (5 varieties); <b>Blue Homestyle Recipes</b> (8 varieties, including 2 for small dogs and 1 for large breeds); <b>Blue Longevity</b> (3 varieties: puppy, adult, senior); <b>Blue’s Stew</b> (5 varieties); <b>Blue Wilderness</b> (3 grain-free varieties).	<b>MADE BY</b> Simmons Pet Food, Siloam Springs, AR, Emporia, KS, and Pennsauken, NJ.
<b>REPRESENTATIVE VARIETY</b> – Blue Homestyle Recipe Chicken Dinner contains: Chicken, chicken broth, chicken liver, carrots, peas, sweet potatoes, brown rice, barley, oatmeal, guar gum . . . 8.5% protein; 4.0% fat; 1.3% fiber; 78% moisture.	
<b>MISC INFO</b> – Blue’s lowest-fat, lowest-calorie foods are in the Blue Longevity line. The highest-fat, highest-protein, highest-calorie foods are in the Blue Wilderness line. Blue Basics is the “limited ingredient” line. The products in the Blue’s Stew and Blue Family Favorite lines are higher-moisture (82%) products. The Blue Homestyle foods are perhaps the most “mainstream” wet foods. Some lines list DHA and fatty acids on the guaranteed analysis. Available in independent pet specialty stores and chains (Petco and Petsmart).	



<b>BREEDER'S CHOICE PET FOODS</b> — Irwindale, CA; (800) 255-4286; apdselectchoice.com, avodermnatural.com, pinnaclepet.com	
<b>LINES/TYPES AVAILABLE</b> – <b>Advanced Pet Diets Select Choice</b> (2 varieties); <b>AvoDerm</b> (9 varieties, including 1 puppy, 3 stews, 1 “weight control,” 1 vegetarian); <b>Pinnacle</b> (3 varieties).	<b>MADE BY</b> Simmons Pet Food, Emporia, KS.
<b>REPRESENTATIVE VARIETY</b> – AvoDerm Original contains: Lamb, chicken broth, chicken, chicken liver, ocean fish, rice, peas, carrots, potatoes, flaxseed . . . 8% protein; 5.5% fat; 1.5% fiber; 78% moisture.	
<b>MISC INFO</b> – Advanced Pet Diets products are mainstream “loaf” style wet foods, with animal protein (chicken and lamb); rice, potatoes, and vegetables. The AvoDerm line was originally developed for dogs with skin and coat issues. The “weight control” variety helpfully guarantees both the minimum AND the maximum percentage of fat in the food. All of the AvoDerm foods list amounts of omega-3 and omega-6 fatty acids on the guaranteed analysis. The Pinnacle foods each have only one animal protein source (chicken, duck, or fish); oatmeal, oat bran, potatoes, and vegetables are the carb sources. Products found in independent pet supply stores and national pet specialty stores (such as Petco, Petsmart).	

<b>CANIDAE CORP.</b> — San Luis Obispo, CA; (800) 398-1600; canidae.com	
<b>LINES/TYPES AVAILABLE</b> – <b>Canidae Complete</b> (5 varieties, including 1 for senior dogs); <b>Canidae Grain-Free Pure</b> (4 varieties).	<b>MADE BY</b> Performance Pet Products, Mitchell, SD.
<b>REPRESENTATIVE VARIETY</b> – Canidae Complete Chicken, Lamb, & Fish contains: Chicken, chicken broth, lamb, chicken liver, ocean whitefish, brown rice, eggs, potatoes, guar gum, sunflower oil . . . 9% protein; 6.0% fat; 1.5% fiber; 78% moisture.	
<b>MISC INFO</b> – Canidae Grain-Free Pure foods have simple formulas, with ingredients lists containing not much more than meat, sweet potatoes or potatoes, peas, carrots, and a vitamin/mineral premix. We appreciate that Canidae lists the amounts of omega-3 and omega-6 fatty acids, calcium, phosphorus, and vitamin E on the guaranteed analysis of all its wet foods; impressive! Complete nutrient profiles for all of its foods are available on the Canidae website. Available in independent pet supply stores.	

<b>CANINE CAVIAR PET FOODS</b> — Riverside, CA; (800) 392-7898; caninecaviar.com	
<b>LINES/TYPES AVAILABLE</b> – 4 varieties, all of which are designated for “supplemental feeding only” (they are not “complete and balanced”).	<b>MADE BY</b> Evanger’s Dog & Cat Food Company, Wheeling, IL.
<b>REPRESENTATIVE VARIETY</b> – Gourmet Duck contains: Duck, sweet potato, water, carageenan gum, cassia gum. 8.5% protein; 11% fat; 3% fiber; 75% moisture.	
<b>MISC INFO</b> – If an owner is looking for some novel proteins for use in a (short-term) elimination diet (to help diagnose allergies), these may be useful: varieties are beaver, duck, turkey, and venison tripe. Available in independent pet supply stores and from a variety of online retailers.	

<b>CASTOR &amp; POLLUX PET WORKS</b> — Clackamas, OR; (800) 875-7518; castorpolluxpet.com	
<b>LINES/TYPES AVAILABLE</b> – <b>Organix</b> (4 varieties); <b>Organix Grain-Free</b> (4 varieties); <b>Natural Ultramix</b> (4 varieties, including 1 puppy variety); <b>Natural Ultramix Grain-Free</b> (4 varieties).	<b>MADE BY</b> Performance Pet Products, Mitchell, SD; and Simmons Pet Food, Emporia, KS (Natural Ultramix).
<b>REPRESENTATIVE VARIETY</b> – Organix Grain-Free Chicken & Vegetable contains: Organic chicken, water, organic turkey, organic chicken liver, organic pea flour, organic carrots, organic potatoes, organic apples, organic guar gum, organic flaxseed meal . . . 7.5% protein; 6% fat; 1% fiber; 78% moisture.	
<b>MISC INFO</b> – All eight of the Organix foods (four contain organic brown rice; the other four are grain-free) contain 95% organic ingredients. Even the guar gum and flaxseed meal, way down the ingredients list, are organic. Products sold in independent pet supply stores as well as national pet specialty stores (Petco, Petsmart); direct shipping is also available.	

<b>DIAMOND PET PRODUCTS</b> — Meta, MO; (800) 442-0402; chickensoupforthepetloverssoul.com; tasteofthewildpetfood.com	
<b>LINES/TYPES AVAILABLE</b> – <b>Chicken Soup for the Pet Lover’s Soul</b> (3 varieties: puppy, adult, senior); <b>Taste of the Wild</b> (3 varieties, all grain-free).	<b>MADE BY</b> American Nutrition Inc., Ogden, UT (Chicken Soup); Performance Pet Products, Mitchell, SD (Taste of the Wild).
<b>REPRESENTATIVE VARIETY</b> – Taste of the Wild Wetlands contains: Duck, duck broth, chicken broth, chicken liver, chicken, egg, peas, potato starch, sweet potatoes, ocean fish . . . 7.5% protein; 3.5% fat; 1% fiber; 80% moisture.	
<b>MISC INFO</b> – Taste of the Wild line utilizes less-common animal protein sources combined with more common proteins. The duck variety also contains chicken and eggs; the salmon variety also contains eggs, and the bison variety contains venison, lamb liver, and eggs. One more variety (lamb) is planned for the Taste of the Wild line. Products are sold in independent pet supply stores and some online retailers, including petfooddirect.com.	

<b>DOGSWELL</b> — Los Angeles, CA; (888) 559-8833; dogswell.com	
<b>LINES/TYPES AVAILABLE</b> – <b>Happy Hips</b> (3 grain-free varieties) and <b>Vitality</b> (3 grain-free varieties).	<b>MADE BY</b> Simmons Pet Food, Pennsauken, NJ.
<b>REPRESENTATIVE VARIETY</b> – Vitality contains: Chicken, chicken meal, oats, barley, brown rice, natural flavors, chicken fat, flaxseed, tomato pomace, sweet potatoes . . . 24% protein; 12% fat; 6% fiber; 10% moisture.	
<b>MISC INFO</b> – Each line of Dogswell wet foods has a chicken, duck, and lamb variety (though each also contains proteins sourced from other animals). The Happy Hips line contains chondroitin sulfate and sources of chondroitin and the amounts of these nutrients are listed on the guaranteed analysis. The Vitality line is enhanced with sources of omega-3 and omega-6 fatty acids and amounts of these nutrients are listed on the guaranteed analysis. Available in independent pet supply stores and Petco.	

**DRS. FOSTER & SMITH** — Rhinelander, WI; (800) 562-7169; drsfostersmith.com**LINES/TYPES AVAILABLE** — **Premium Healthy** (3 varieties); **Country Classic** (2).**MADE BY** Simmons Pet Food, Pennsauken, NJ.**REPRESENTATIVE VARIETY** — Premium Healthy Lamb & Brown Rice contains: Lamb, lamb broth, lamb liver, brown rice, herring, carrots, sweet potatoes, guar gum, potassium chloride, ground flaxseed . . . 9% protein; 7% fat; 1% fiber; 78% moisture.**MISC INFO** — Herring is used in all of the Drs. Foster & Smith foods: the Premium Healthy products (lamb, chicken, and fish varieties) and the Country Classic products (turkey & chicken stew and beef stew). Country Classic varieties are higher in moisture (82%) and a little lower in protein and fat. Company is a retail catalog company, so it direct-ships to your home.**EVANGER'S DOG & CAT FOOD COMPANY** — Wheeling, IL; (800) 288-6796; evangersdogfood.com**LINES/TYPES AVAILABLE** — **Classic** (4 varieties, including 1 puppy and 1 senior); **Grain-Free Game Meats** (9 varieties); **Hand-Packed** (7 varieties); **Organics** (2 varieties); **Signature Series** (4 varieties); **Super Premium** (9 varieties).**MADE BY** Evanger's Dog & Cat Food Company, Wheeling, IL.**REPRESENTATIVE VARIETY** — Signature Series Slow Cooked Chicken Stew contains: Chicken, turkey liver, gravy (chicken broth, tomato paste, guar gum), carrots, potatoes, peas, rosemary extract, vitamin/mineral premix. 6% protein; 5% fat; 1.5% fiber; 82% moisture.**MISC INFO** — Quite a few products (including all the Game Meats and some of the Hand-Packed and Super Premium varieties) are for supplemental/intermittent feeding only (not complete and balanced). Products are available in independent pet supply stores and via direct shipping.**FROMM FAMILY FOODS** — Mequon, WI; (800) 325-6331; frommfamily.com**LINES/TYPES AVAILABLE** — **Fromm Family Gold** (3 varieties).**MADE BY** Performance Pet Products, Mitchell, SD.**REPRESENTATIVE VARIETY** — Gold Chicken contains: Chicken, chicken broth, chicken liver, carrots, potatoes, peas, tomato paste, potato starch, vitamin/mineral premix. 9% protein; 4% fat; 1.5% fiber; 78% moisture.**MISC INFO** — Varieties are Duck & Chicken; Salmon & Chicken; and Chicken. Sold in independent pet supply stores and via online retailers; direct shipping also available.**KENT NUTRITION GROUP (formerly Blue Seal Feeds)** — Muscatine, IA; (800) 367-2730; bynaturepetfoods.com**LINES/TYPES AVAILABLE** — **By Nature Naturals** (4 varieties) and **By Nature Organics** (4 varieties).**MADE BY** Simmons Pet Food, Pennsauken, NJ (By Nature Naturals); and Performance Pet Products, Mitchell, SD (By Nature Organics).**REPRESENTATIVE VARIETY** — Organic Turkey, Sweet Potato & Peas contains: Organic turkey, water, organic sweet potatoes, organic peas, guar gum, locust bean gum, carrageenan gum, dicalcium phosphate, potassium chloride, taurine . . . 8% protein; 5% fat; 1.5% fiber; 78% moisture.**MISC INFO** — All four of the By Nature Naturals products contain 95% meat; two varieties contain a single species of animal protein (chicken, beef). Two of the By Nature Organics foods (organic chicken, organic turkey) boast an extremely limited ingredient list (meat, water, thickeners, vitamin/mineral premix); the other two products contain organic vegetables. Kent Nutrition Group is a new division of the company that made By Nature foods all along; the creation of the new group signals an intent to grow this division. Available in independent pet specialty stores.**LOTUS NATURAL FOOD** — Torrance, CA; (888) 995-6887; lotuspetsfoods.com**LINES/TYPES AVAILABLE** — 3 varieties.**MADE BY** Lotus Natural Food, Torrance, CA.**REPRESENTATIVE VARIETY** — Turkey Stew contains: Turkey, turkey gravy, chicken liver, yams, carrots, pumpkin, blueberries, salmon oil, olive oil, dicalcium phosphate . . . 8% protein; 4% fat; 1.5% fiber; 82% moisture.**MISC INFO** — All three varieties (Beef & Asparagus; Chicken & Asparagus; Turkey) are stew-like, with identifiable chunks of shredded (not reformed) meats, and shredded fruits and vegetables. Lotus built its own brand-new canning facility so it could make its own products. Company says all ingredients in its wet foods are sourced in North America with just one exception: green mussels from New Zealand. Omega-3 and -6 amounts included on guaranteed analysis. Products are available in independent pet supply stores and online from doggiefood.com.**MERRICK PET CARE** — Amarillo, TX; (800) 664-7387; merrickpetcare.com**LINES/TYPES AVAILABLE** — **Merrick 5-Star Entrees** (24 varieties); **Before Grain** (6 grain-free varieties); **Whole Earth Farms** (3 varieties).**MADE BY** Merrick Pet Care, Hereford, TX.**REPRESENTATIVE VARIETY** — 5-Star Cowboy Cookout contains: Beef, beef broth, beef liver, sweet potatoes, carrots, green beans, apples, potato starch, beef meal, eggs . . . 9% protein; 4% fat; 1% fiber; 81% moisture.**MISC INFO** — Merrick's 5-Star Entrees line boasts an unbelievable number of products, some of which are offered seasonally. Some varieties available in 5.5 oz cans. Products are sold in Petco and in independent pet supply stores; also available via direct shipping with no shipping charges in the U.S.



**MULLIGAN STEW PET FOOD** — Jackson, WY; (888) 364-7839; mulliganstewpetfood.com

<b>LINES/TYPES AVAILABLE</b> – 6 varieties.	<b>MADE BY</b> Performance Pet Products, Mitchell, SD.
<b>REPRESENTATIVE VARIETY</b> – Mulligan Stew Beef contains: Beef, water, cabbage, beef liver, brown rice, horseradish, L-methionine, L-cysteine, beta carotene, selenium yeast . . . 8.5% protein; 6% fat; 1.5% fiber; 78% moisture.	
<b>MISC INFO</b> – Other varieties are chicken, salmon, turkey, duck, and beef & bison. Interesting formulations using ingredients not commonly seen in pet food, such as cabbage and horseradish, “cruciferous vegetables that contain high amounts of glutathione peroxidase, powerful enzymes that provide antioxidant benefits.” This is one of the few companies that put “ash” on their guaranteed analysis; that’s awesome! Company says all ingredients are sourced from U.S. farms and ranches. Available in independent pet supply stores and via direct ship from the company.	

**NATURAL BALANCE** — Pacoima, CA; (800) 829-4493; naturalbalanceinc.com

<b>LINES/TYPES AVAILABLE</b> – <b>Ultra Premium</b> (8 varieties, including 1 reduced calorie and 1 vegetarian formula); <b>Limited Ingredient Diets</b> (5 varieties, all grain-free).	<b>MADE BY</b> American Nutrition Inc., Ogden, UT; Performance Pet Products, Mitchell, SD.
<b>REPRESENTATIVE VARIETY</b> – Natural Balance Ultra Premium Chicken contains: Chicken, chicken broth, chicken liver, carrots, oat bran, brown rice, potatoes, dehydrated potatoes, chicken meal, canola oil . . . 8% protein; 5% fat; 1.5% fiber; 78% moisture.	
<b>MISC INFO</b> – Five of the eight Ultra Premium products are made with animal protein from a single species of animal; the reduced calorie and “Original” formula contain four animal species. Four of the five grain-free Limited Ingredient Diets are made with sweet potatoes and potatoes (the venison variety in particular seems to have a lot of these ingredients); the fifth (duck) is made with potatoes. Most varieties now available in 13 oz and 6 oz cans. Company tests each batch for contaminants and makes the test results available on its website. Products available in independent pet supply stores and Petco.	

**NATURA PET PRODUCTS** (A division of Procter & Gamble) — Fremont, NE; (800) 532-7261; naturapet.com

<b>LINES/TYPES AVAILABLE</b> – <b>California Natural</b> (3 varieties); <b>Evo</b> (6 grain-free varieties); <b>Innova</b> (7 varieties, including 2 puppy and 2 senior).	<b>MADE BY</b> Simmons Pet Food, Emporia, KS.
<b>REPRESENTATIVE VARIETY</b> – Evo Turkey & Chicken contains: Turkey, chicken, turkey broth, chicken broth, chicken meal, herring, carrots, eggs, salmon meal, natural flavor . . . 12% protein; 8% fat; 0.5% fiber; 78% moisture.	
<b>MISC INFO</b> – Each of the California Natural foods contain a single animal protein source and single carbohydrate source. Evo foods are grain-free, high in protein and fat. Innova foods are “life stage” foods (puppy, adult, senior) contain several sources of animal protein. Innova line also offers products for large breed puppies, adults, and seniors, and a “lower fat” adult food. All of the Natura foods list extra nutrients on the guaranteed analyses. Innova includes omega-3 and -6 fatty acids, vitamins C and E, EPA, and DHA. Evo includes ash and vitamin E. Complete nutrient profiles for each product are listed on the naturapet.com website – wow. Products sold in independent pet supply stores and via online retailers.	



**NATURE'S VARIETY** — Lincoln, NE; (888) 519-7387; naturesvariety.com

<b>LINES/TYPES AVAILABLE</b> – <b>Homestyle by Prairie</b> (7 varieties); <b>Instinct</b> (6 grain-free varieties); <b>Prairie</b> (4 varieties).	<b>MADE BY</b> Simmons Pet Food, Emporia, KS.
<b>REPRESENTATIVE VARIETY</b> – Homestyle by Prairie Beef & Bison Stew contains: beef broth, beef, beef liver, egg whites, potato starch, bison, barley, spinach, cranberries, oat fiber . . . 7.5% protein; 4% fat; 1% fiber; 80% moisture.	
<b>MISC INFO</b> – Homestyle foods are stew-like, with identifiable chunks of real foods. Prairie products are more mainstream, “loaf” style foods. Instinct products are each 95% meat. Some products are available in 5.5 oz cans. Company strongly promotes diet rotation among varieties and types, offering complementary frozen raw and dry kibble foods. Complete nutrient profiles for each product are listed on company website. Love it! Products sold in independent pet supply stores and via online retailers.	

**PETCUREAN PET NUTRITION** — Chilliwack, BC, Canada; (866) 864-6112; petcurean.com

<b>LINES/TYPES AVAILABLE</b> – <b>Go! Natural</b> (4 varieties, including 2 grain-free).	<b>MADE BY</b> Simmons Pet Food, Pennsauken, NJ (Chicken & Vegetables) and Streetsville, Ontario.
<b>REPRESENTATIVE VARIETY</b> – Go! Chicken & Vegetables contains: Chicken, chicken broth, chicken liver, salmon broth, brown rice, potatoes, potato starch, dried egg white, carrots, peas . . . 8% protein; 4% fat; 1% fiber; 82% moisture.	
<b>MISC INFO</b> – Grain-free products are Chicken, Turkey & Duck (each is deboned) and Trout & Salmon. Salmon & Vegetables variety also includes chicken liver. Products available in independent pet supply stores and a variety of online retailers.	

**PETGUARD** — Green Cove Springs, FL; (877) 738-4827; petguard.com

<b>LINES/TYPES AVAILABLE</b> – 14 varieties, including 1 puppy, 2 vegetarian, and 2 organic varieties.	<b>MADE BY</b> Simmons Pet Food, Pennsauken, NJ.
<b>REPRESENTATIVE VARIETY</b> – Organic Chicken & Vegetable contains: Organic chicken, organic chicken broth, organic brown rice, organic oats, organic carrots, organic potatoes, organic chicken liver, tricalcium phosphate, organic apples, organic cranberries . . . 8% protein; 7% fat; 1% fiber; 78% moisture.	
<b>MISC INFO</b> – Company uses no GMO ingredients. Beef used in formulas is Coleman Natural Beef. Some products available in 5.5 oz cans. Products available in independent pet supply stores and a variety of online retailers.	

<b>PET-TAO</b> — Fairview, TN; (615) 934-3832; pettao.com	
<b>LINES/TYPES AVAILABLE</b> – 6 varieties, including 3 “prescription” foods.	<b>MADE BY</b> Evanger’s Dog & Cat Food Co., Wheeling, IL.
<b>REPRESENTATIVE VARIETY</b> – Canine Balanced Diet contains: Beef, turkey, chicken gizzards, white potato, beef heart, tofu, beef liver, carrots, celery, beef kidney . . . 11% protein; 4% fat; 6% fiber; 76% moisture.	
<b>MISC INFO</b> – Formulated by veterinarians with experience in Eastern medicine. “With all Pet-Tao diets, every ingredient is chosen for a specific reason, according to the principles of Eastern Food Therapy. Because of the combination of equal amounts of warming, cooling, and neutral ingredients, this diet is energetically balanced for all dogs.” Two products are formulated for seasons (1 for summer, 1 for winter). Three (Blood Diet, Qi Diet, and Yin Diet) are available with a veterinary prescription only. Products available direct from the company and from select veterinary practices.	

<b>SOLID GOLD HEALTH PRODUCTS FOR PETS, INC.</b> — El Cajon, CA; (800) 364-4863; solidgoldhealth.com	
<b>LINES/TYPES AVAILABLE</b> – 4 varieties.	<b>MADE BY</b> Simmons Pet Food, Pennsauken, NJ.
<b>REPRESENTATIVE VARIETY</b> – Hund-N-Flocken contains: Lamb, water, lamb liver, brown rice, carrots, barley, guar gum, potassium chloride, dicalcium phosphate, oatmeal . . . 8% protein; 5% fat; 1.5% fiber; 78% moisture.	
<b>MISC INFO</b> – One variety (“Green Cow”) is made with green beef tripe; dogs love it! That variety is for adult maintenance only. Products available in independent pet supply stores and Petco.	

<b>THREE DOG BAKERY</b> — Kansas City, MO; (800) 487-3287; threedog.com	
<b>LINES/TYPES AVAILABLE</b> – <b>Gracie’s Gourmet Entree</b> (3 varieties); <b>Entree for Dogs</b> (3 varieties).	<b>MADE BY</b> Select Brands, Springfield, MO.
<b>REPRESENTATIVE VARIETY</b> – Entree for Dogs Chicken, Carrots, Green Beans & Rice variety contains: Chicken, carrots, green beans, cooked rice, flax seed, corn starch, vitamin/mineral premix. 8% protein; 6% fat; 1% fiber; 79% moisture.	
<b>MISC INFO</b> – Each of the Gracie’s Gourmet products is identical to one of the Entree for Dogs products. These products are pouched, rather than canned. Formerly the company would not disclose its (human food) manufacturing site; we’re glad they changed their minds so we could include them here. Available in Three Dog Bakery stores and its website, independent pet supply stores, and select supermarket channels (see the website).	

<b>VERUS PET FOODS</b> — Abingdon, MD; (888) 828-3787; veruspetfoods.com	
<b>LINES/TYPES AVAILABLE</b> – 7 varieties.	<b>MADE BY</b> Performance Pet Products, Mitchell, SD.
<b>REPRESENTATIVE VARIETY</b> – Chicken & Rice contains: Chicken, chicken broth, chicken liver, brown rice, pearled barley, dried kelp, salt, calcium sulfate, potassium chloride, dicalcium phosphate . . . 8% protein; 5% fat; 2% fiber; 78% moisture.	
<b>MISC INFO</b> – Company says all lamb used in foods is free-range, grass-fed, New Zealand lamb, and all other ingredients are grown and sourced in the USA. Available in independent pet supply stores and through a few online retailers.	

<b>VET’S CHOICE</b> — Deer Park, NY; (800) 992-9738; vetschoice.com	
<b>LINES/TYPES AVAILABLE</b> – <b>Holistic Health Extension</b> (4 varieties, including 3 grain-free, 2 of which are intended for supplemental/intermittent feeding).	<b>MADE BY</b> Simmons Pet Food, Emporia, KS.
<b>REPRESENTATIVE VARIETY</b> – Lamb Entree contains: Lamb, lamb broth, lamb liver, brown rice, carrots, egg, vitamin/mineral premix. 9% protein; 6% fat; 1% fiber; 78% moisture.	
<b>MISC INFO</b> – Available in independent pet supply stores (mostly east of the Rockies) and via online retailers.	

<b>WELLPET</b> — Tewksbury, MA; (800) 225-0904; wellpet.com; wellnesspetfood.com; holisticselect.com; eaglepack.com	
<b>LINES/TYPES AVAILABLE</b> – <b>Eagle Pack</b> (4 varieties); <b>Holistic Select</b> (8 varieties, including 1 puppy variety); <b>Wellness</b> (24 varieties, including 2 grain-free “Core” varieties; 9 “Complete Health,” including 1 puppy and 1 senior; 3 “Simple Food Solutions”; 6 “Stews”; 5 “95%” foods for supplemental/intermittent feeding)	<b>MADE BY</b> American Nutrition Inc., Ogden, UT; Simmons Pet Food, Siloam Springs, AR, Emporia, KS, and Pennsauken, NJ.
<b>REPRESENTATIVE VARIETY</b> – Wellness Complete Health Chicken & Sweet Potato contains: Chicken, chicken broth, chicken liver, whitefish, ground barley, sweet potatoes, carrots, ground flaxseed, carrageenan, canola oil . . . 8% protein; 5% fat; 1% fiber; 78% moisture.	
<b>MISC INFO</b> – WellPet bought Eagle Pack (based in Mishawaka, Indiana) a few years ago and now operates the old Eagle Pack dry food plant there. The company has continued to support the Eagle Pack and Holistic Select lines. Between these products and WellPet’s ever-expanding Wellness line, they have something good for any dog. Available in pet specialty stores (such as Petco and Petsmart) and independent pet supply stores.	

<b>WERUVA</b> — Natick, MA; (800) 776-5262; weruva.com	
<b>LINES/TYPES AVAILABLE</b> – <b>Weruva Kobe/Kurobuta</b> (5 grain-free varieties).	<b>MADE BY</b> Evanger’s Dog & Cat Food Co., Wheeling, IL.
<b>REPRESENTATIVE VARIETY</b> – Kurobuta Hero contains: Organic turkey, organic turkey broth, pork, guar gum, vitamin/mineral premix. 8% protein; 5% fat; 1.5% fiber; 78% moisture.	
<b>MISC INFO</b> – Weruva also makes a dozen “ <b>Human Style</b> ” formulas at an undisclosed location in Thailand; because the location is undisclosed, these do not meet our selection criteria as “approved” foods. Available in independent pet supply stores and via online retailers.	



# Two Dogs Barking

*Training more than one dog at a time can be a challenge – especially when it comes to barking.*

BY PAT MILLER, CBCC-KA, CPDT-KA, CDBC

It's feeding time at the Miller household. All is calm until I pick up Scooter's bowl to carry it to the laundry room where the little Pomeranian can eat without harassment from the larger dogs. As I lift the bowl from the counter, Scooter erupts with high-pitched barking and spinning, and Lucy the Corgi joins in with her deeper-but-still-sufficiently irritating vocals. It's more of an annoying bit of ritual than a dangerous or disturbing one, but it's annoying just the same, and one that would be nice to extinguish.

But how does one modify behavior if the protocol requires the offering and removal of reinforcement based on the subject's behavior, when there are two subjects, and reinforcement for one automatically reinforces the other? Stated in plain English, how do I get two (or more) dogs to stop barking when rewarding the quiet one also rewards the barking one?

## THE DILEMMA

If I set the bowl back down on the counter when both dogs bark, I'm using *negative punishment*; the dogs' behavior of barking makes the good thing – delivery of their meal – go away. When the dogs stop barking I use *positive reinforcement*; the dog's quiet behavior results in a good thing: I pick up the bowl and proceed with delivery of dinner.

Now, here's the dilemma: When I pick up the bowl, Lucy stays quiet, so I should positively reinforce that by continuing with dinner delivery. But Scooter starts barking again; I need to abort delivery so I'm not reinforcing Scooter's barking. But if I set the bowl back down, I'm punishing Lucy for being quiet. Get it?

**in any group of dogs, there are always individuals whose barking is more persistent and problematic than others. In this pack, it's the German Shepherd and the white Greyhound.**

The answer to the dilemma is this: I can modify the behavior of only one dog at a time. I need to select which dog I want to work with first, and figure out how to manage the other dog's behavior until I'm ready to work with her. In this scenario, I might change my dog-feeding routine by putting Lucy in my office before I begin food preparation so I can work with Scooter's barking behavior. After he gets his dinner, I can let Lucy out to join the rest of the group, and feed all of them.

When Scooter no longer barks at food delivery time, I can try reintroducing Lucy to the mix. If her barking re-triggers Scooter's barking, then I might need to put Scooter away while I work on modifying Lucy's barking. When

each can handle dinner delivery without barking, then I can try them together.

## MULTI-DOG TRAINING: COUNTER-CONDITIONING

Many multi-dog training programs break down because owners, understandably, aren't always willing to work with the dogs separately. The prospect of implementing multiple behavior modification programs for multiple dogs can be quite daunting. We're lucky only two of our five dogs bark at dinnertime. If all five joined in, the cacophony of barking would be overwhelming, not to mention the prospect of working with each of five dogs to modify barking behavior. They might never get fed!

Yet, individual modification work is almost always necessary for success with behaviors that involve multiple dogs. One dog's barking just sets the other(s) off if the other's barking hasn't been solidly modified. Perhaps the two most common examples of multi-dog barking are when an owner walks two or more dogs on leash at one time, or when multiple dogs in a home (or in the yard) are aroused by some stimulus, such as someone at the door, someone walking past on the sidewalk, a squirrel or cat running across the yard or up a tree, a car going by . . .

I see the pained expression on my clients' faces when I suggest to them that they need to walk their dogs individually, or at least with separate handlers. In many households, one person is in the habit of taking both (or all) dogs for a walk at the same time. I can see them doing the math in their heads; a 30-minute walk per day with three dogs has suddenly compounded into three 30-minute





**Trainer Sarah Richardson, of The Canine Connection in Chico, California, pulls aside the two problem barkers for a counter-conditioning session. If they were not responding so well as a pair, she would work with each dog individually.**



**A helper is walking a strange dog back and forth past the gate. Sarah waits for the dogs to turn their heads to look at the strange dog, and immediately doles out treats. The dogs quickly learn that glancing at the other dog and back to Sarah earns them a treat.**

walks, or 90 minutes per day. That equals 10.5 hours per week instead of 3.5 hours. Wow. Who has that much extra time to devote to dog walking?

Still, it's important. When dogs-on-leash are barking at an outside stimulus, such as another dog or a passing car, my favorite approach to modification is counter-conditioning. The instant your dog sees another dog (or the approaching vehicle), feed bits of chicken (or other very high-value treat), preferably before your dog begins barking. Pause, let him look at the approaching dog (car), and quickly feed more chicken, again before he barks. Continue with your pause/look/treat procedure until the dog (or car) has passed. Then resume your walk until the next dog (car) comes along.

Over time, your dog will learn that the appearance of another dog/car makes you feed him chicken, and instead of barking, he'll look to you for chicken. This works whether the stimulus causing him to bark is a dog, a car, a kid on a bicycle, or anything else. In time, as his "stimulus/chicken" association becomes very strong, you'll be able to gradually – and significantly – reduce the amount of chicken you have to feed. In time, you'll be able to leave the chicken home and just use his regular everyday treats to reinforce his looks at you when a target passes.

As simple as this process is, it's virtually impossible to do it with two dogs at the same time. The timing of your treat delivery is critical; it must happen the instant after your dog sees the stimulus but before your dog starts to bark.

You simply can't manage two potential barkers and get the timing right for both. Hence the mandate to walk one dog at a time – or at least one dog per handler – if you're serious about getting the barking under control. When you have solidly established the conditioned emotional response (CER) – the "where's my chicken look" – for each dog separately, you can begin to walk them together.

### **MULTI-DOG TRAINING: POSITIVE INTERRUPT**

You can modify multi-dog "someone's at the door" barking in a similar fashion – but it's harder because all the dogs are usually in the home. You could do a lot of one-at-a-time set-ups with the other dogs out of earshot. (See "Knock, Knock," WDJ February 2010). Still, chances are when someone comes a-knockin', at least one of your multiple dogs may bark, which just might set everyone off. The same is true with outside/backyard stimuli. Despite your best efforts to counter-condition, the arousal behavior of multiple dogs is likely to cause mutual escalation or arousal, and barking will happen.

For those times, a positive interrupt is a powerful tool. I use a voice cue ("Over here!") as a positive interrupt for an individual dog, but in the chaos of multi-dog barking, a louder signal is called for. If you are blessed, as I am, with the ability to give a shrill mouth-whistle, that can work. If not, there are wonderful whistles for sale that are so loud you'll need to cover your ears when you blow them, or risk damage to your hearing. My favor-

ite is the Storm Whistle ([stormwhistles.com/storm.html](http://stormwhistles.com/storm.html); 314-436-3332). You might want to buy several, so you can stash them in strategic locations around your house and yard.

You'll want to "charge" your whistle in the same way you charge a clicker, to give your dog a very positive association between the sound of the whistle and something wonderful. I tend to fall back on chicken as my favorite "something wonderful" – dogs usually love it, and it's relatively low-fat, low-calorie, so you can use it generously without adding too many pounds to your dog, and with a low risk of tummy upsets.

Charge the whistle one dog at a time. With one dog close to you and the others put away out of earshot, blow the whistle (not too loudly) and feed a treat. Blow the whistle, feed a treat. Repeat many times. When your dog makes the connection between whistle and chicken, you'll see his eyes light up at the sound, and he'll be looking for the treat. Next, go out in the yard where he can be farther away from you, and repeat your whistle/treat routine, until the sound of the whistle brings him running for a treat even when he's some distance away, sniffing the ground. Now put him away and try it with the next dog. When all dogs are "charged," try it with two dogs at a time, gradually adding dogs to the group until your entire pack will interrupt what they're doing and come running to you at the sound of the whistle. (By the way, this doubles as a great recall tool as well!)

Now you're ready to try it for real. If you're confident your dogs will respond,





After a bit of practice (in reality, a refresher exercise), the two barkers are ready to rejoin the rest of Sarah's resident pack at the gate. Richardson operates a daycare and boarding facility, so it's important for her dogs to model good greeting behavior!

give it a try with the whole pack. If you think that's too much for your canine pals, start your real life trials one, or maybe two dogs at a time, just like you did with charging the whistle. Arrange a set-up that you know will trigger your dog(s) to bark. Have your whistle handy. When the barking starts, blow the whistle, and reward your dogs generously when they stop barking and come running to you. Then pat yourself on the back.

Continue practicing with set-ups for as many different stimuli as you can think of. The more you practice, the better your dogs will respond when real-life stimuli trigger a bout of barking. If you're really good, your dogs may start running

to you in anticipation of the whistle/treat game when they see or hear stimuli that used to cause barking. When that happens, you deserve to reinforce yourself with dinner and a movie. 🐾

*Pat Miller, CBCG-KA, CPDT-KA, CDBC, is WDJ's Training Editor. Author of numerous books on positive dog training, she lives in Fairplay, Maryland, site of her Peaceable Paws training center, where she offers dog training classes and courses for trainers. See "Resources," page 24, for more information.*

*Thanks to Sarah Richardson, CPDT-KA, CDBC, Chico, California, for modeling for this article. See page 24, for contact information.*

## What you can do . . .

- **Don't punish!** It may (or may not) suppress barking in the moment, but is unlikely to modify the behavior in the long run. In fact, it may actually make the barking worse or cause new behavior problems.
- **Teach your vocal dogs a positive interrupt** so you can minimize their barking behavior.
- **Learn how to apply operant and counter-conditioning protocols to modify your dogs' barking when you can't or don't wish to manage the behavior.**
- **Have reasonable expectations: accept that some barking is normal and appropriate for dogs. Identify times when you can allow your dogs to vocalize.**



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# Too Much Cortisol

*Cushing's disease is common in older dogs; diagnosis and treatment can be complicated.*

BY CJ PUOTINEN AND MARY STRAUS

**S**ometimes life-threatening illnesses develop so slowly that no one pays much attention. An older dog who's always thirsty drinks huge quantities of water. He's hungrier than usual and has developed a thin coat and pot belly. He pants all the time, and now his hind legs are losing muscle tone and getting weak. Many owners dismiss these as normal signs of aging, but they are classic symptoms of Cushing's disease, which affects an estimated 100,000 dogs in the U.S. every year.

Also known as hyperadrenocorticism, Cushing's is the *opposite* of Addison's disease (see "The Great Pretender" in last month's WDJ). Both illnesses involve the adrenal glands, which produce cortisol – a stress hormone that helps prepare a dog for fight or flight by breaking down muscle and fat to convert into glucose. While Addison's disease results from insufficient cortisol, Cushing's disease results from too much – and prolonged exposure to cortisol can have negative effects on the entire body. Cushing's puts dogs at increased risk for diabetes, pan-

creatitis, calcium oxalate bladder stones, pulmonary thromboembolism, hypertension (high blood pressure), urinary tract infections, protein-losing kidney disease, hair loss, skin problems, and congestive heart failure.

Cushing's disease affects primarily middle-aged and older dogs. The majority (about 85 percent) of Cushing's disease cases are caused by **tumors of the pituitary gland**; these are usually benign (adenomas). About 15 percent of Cushing's cases are caused by **tumors of the adrenal gland**; about half of these



**Girl, a Miniature Schnauzer with Cushing's disease, is doing well with treatment, even after developing acute pancreatitis, which is a common problem for both her breed and her condition.**

adrenal tumors are benign and about half are malignant (carcinomas).

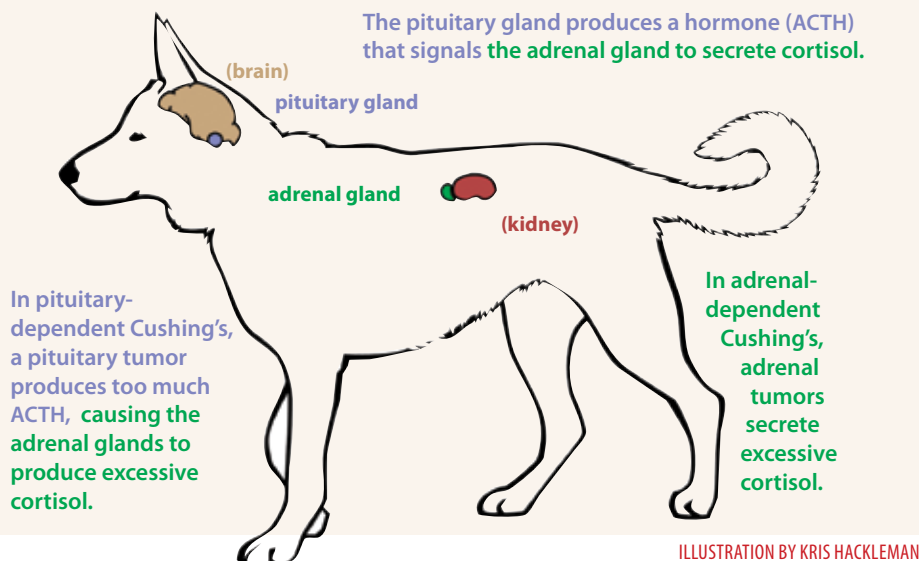
In **pituitary-dependent hyperadrenocorticism** (PDH), tumors cause the pituitary gland to overproduce adrenocorticotropic hormone (ACTH), which signals the adrenal glands to release cortisol. The average age at diagnosis with PDH is 10 years, and the most commonly affected breeds are Poodles, Dachshunds, Beagles, German Shepherds, Boxers, Boston Terriers, Labrador Retrievers, and terriers, with 75 percent of patients weighing less than 44 pounds.

With **adrenal-dependent** Cushing's, the **adrenal tumor** itself secretes excessive cortisol. The average age for diagnosis with adrenal tumors is 11 years, with Poodles, German Shepherds, Dachshunds, Labrador Retrievers, and terriers predominating. About half of all cases occur in dogs weighing more than 44 pounds, and females may be more commonly affected.

## PITUITARY CUSHING'S

Girl, a Miniature Schnauzer, has lived with Cindy Bright of Indiana, Pennsylvania, since her first owner passed away in 2006. Girl is famous for eating anything (including dehydrated or living toads); at 27 pounds, she was seriously overweight.

## CUSHING'S AND THE GLANDS





By February 2008, Girl's symptoms included excessive thirst and urination, overeating, urinary incontinence, and occasional hyperexcitement or aggression. She was diagnosed with PDH and was given Vetoryl (trilostane), a drug that was not approved in the U.S. until 2009 for the treatment of both pituitary- and adrenal-dependent Cushing's, but which has been used in the U.K. since 2001. Bright imported the drug from the U.K. (something that could be accomplished with a prescription and by filling out a form to obtain permission from the FDA).

Today Girl is doing well, and her weight is a normal 19 pounds. Her occasional health setbacks tend to follow dietary indiscretions, such as her consumption of a 6-pack of English muffins that someone set outside the basement freezer and her indulgence in wild rabbit droppings, which Bright describes as Girl's "caviar." Girl suffered a serious bout of pancreatitis in 2010. "Life is like walking the tightrope," Bright says. "One slip and it's difficult to get everything back on course."

Like Girl, all dogs with Cushing's disease require careful monitoring. Depending on the drug used to control symptoms, even minor changes in condition or behavior can signal major problems, and conscientious caregivers keep a close eye on anything that seems unusual or different.

In Springfield, Vermont, Kathy Mason's Beagle, Chance, was diagnosed with PDH at 8 years old. He was treated with Anipryl, which was not effective, and then switched to Lysodren (mitotane). "After about two years of good bloodwork," says Mason, "Chance went into an Addisonian crisis. We thought we were going to lose him, but he survived and stayed Addisonian for the rest of his life. It was so much easier to treat. He passed away in January, five years post diagnosis, at the age of 14 years old."

While most **pituitary tumors** are microscopic, 10 to 20 percent are larger than 10 millimeters (3/8 inch) in diameter. Called macrotumors or macroadenomas, almost all of these pituitary tumors are benign, but about half are large enough to compress the brain and cause neurological symptoms such as listlessness, poor appetite, confusion, walking in circles, or seizures. Most dogs are diagnosed with Cushing's at least six months before neurological symptoms develop.

Breeds with short noses, such as Boxers and Pugs, tend to have the largest pituitary tumors.

Most dogs with pituitary tumors are treated with medication because their tumors are considered inoperable. However, a new surgical technique allows some tumors to be removed (see "New Treatment for Pituitary-Dependent Cushing's Disease," WDJ March 2011).

Another option for large pituitary tumors is radiation therapy, which is expensive (\$3,000 to \$5,000 in the Los

amounts of water, and began raiding the trash. Her owner, Kristin Boggs, took Maggie to their veterinarian, who suspected Cushing's. "Usually Cushing's is pituitary-based," she says, "but instead of assuming this, my vet ordered an ultrasound test. He had once before seen a case of Cushing's that was caused by an adrenal tumor. Sure enough, Maggie had a large tumor on her adrenal gland."

The solution was to remove the entire gland. Maggie's surgery took place at a special internal medicine veterinary



**Chance's treatment for Cushing's caused him to develop permanent Addison's disease. This sounds bad, but actually, it's a condition that his owner found easier to manage.**

Angeles area) and can have adverse side effects such as skin and hair loss, hearing loss, or problems with tear production in the eyes. Although successful in 70 percent of cases, further treatment for Cushing's is usually required, and tumors treated with radiation are likely to recur. Survival time is not increased if neurological problems are severe.

### **ADRENAL CUSHING'S**

Three years ago Maggie, a 12-year-old black Labrador Retriever/hound-mix in Atlanta, Georgia, developed a voracious appetite, drank incredibly large

amounts of water, and began raiding the trash. Her owner, Kristin Boggs, took Maggie to their veterinarian, who suspected Cushing's.

"Maggie came through with flying colors, despite an incision almost the full length of her belly," says Boggs. "She's a tough old girl. Thankfully the tumor was benign. After a few weeks of medication to balance her cortisol levels, she was back to normal."

In Toledo, Ohio, Linda Boyle's Springer Spaniel, Cody, was diagnosed with Cushing's disease at age 11 after developing a ravenous appetite and gaining weight. Cody's ultrasound exam revealed tumors on both adrenal glands.

“A bilateral adrenalectomy is very risky,” says Boyle, “but it worked well for Cody. He became an Addison’s dog because his body no longer produced any cortisol at all, but he lived another two years with good quality of life before passing away from what we believe was pneumonia.”

Because Cushing’s patients tend to have high blood pressure and poor healing ability, several months of medical therapy may be needed to strengthen the patient prior to surgery. After surgery, prednisone or other corticosteroids may be required for a few months until the dog’s ability to produce cortisol recovers, and some dogs may need mineralocorticoid replacement as well.

In a survey of 63 dogs who had surgery, 4 (6 percent) had inoperable tumors and were euthanized; 18 (29 percent) died during surgery or soon after because of complications; and the average post-surgical life span for the remaining 41 dogs was 46 months.

As this article goes to press, Maggie’s Cushing’s symptoms have returned, caused by a new tumor on her remaining adrenal gland. “I can’t believe this has happened to us again,” says Boggs. “It’s an exact repeat of what we went through three years ago. We don’t know if the tumor is malignant or benign, as we don’t feel extensive surgery at her age (15 ½) is reasonable. My vet and I have decided to treat her with trilostane and see how she does. My priority now is that she is happy and comfortable.”

## DIAGNOSING CUSHING’S

Cushing’s disease isn’t always easy to diagnose. Routine test results that can point toward Cushing’s include:

- High or very high alkaline phosphatase (ALP, ALKP, SAP). Although this is a “liver enzyme,” marked elevation is associated with cortisol. It does not indicate liver disease if other liver enzymes such as ALT (alanine aminotransferase) are normal.
- Increased neutrophils and decreased lymphocytes (stress leukogram).
- Elevated cholesterol and triglycerides due to abnormal fat mobilization.
- Fasting hyperglycemia due to insulin resistance.



**Maggie did great for three years following surgery to remove an adrenal tumor, but recently was found to have a tumor on her other adrenal gland, which is being treated medically.**

- Liver enzymes may be mildly elevated.
- Dilute urine (low specific gravity) due to excessive drinking.
- Protein in urine (microalbuminuria or proteinuria).
- X-rays may show an enlarged liver and occasionally calcium deposits in the skin (calcinosis cutis, which feel like rocks and cause itching).

Dogs with Cushing’s are prone to bladder, skin, and other infections due to the immunosuppressive effects of cortisol. About 20 percent of dogs with Cushing’s have an inapparent bladder infection, requiring a culture (not just urinalysis) to detect.

Confirming a Cushing’s diagnosis can be challenging, especially as **false positives** are common in dogs with nonadrenal illness. The following tests are commonly used:

- **Urine Cortisol:Creatinine Ratio (UCCR)** is a screening test only. A negative result rules out Cushing’s, but anything that increases stress can cause a positive result, necessitating further testing. Use urine samples caught at home for this test so that the stress of a vet visit doesn’t influence the results.
- **Low Dose Dexamethasone Suppression (LDDS)**, considered the most

accurate for diagnosing Cushing’s, takes eight hours in the hospital. A baseline blood cortisol level is measured, then a tiny dose of dexamethasone (corticosteroid) is injected. In a normal dog, blood cortisol levels drop after eight hours. Blood samples are sometimes checked after four hours, as this can help classify the form of Cushing’s. About 95 percent of dogs with Cushing’s test positive, but false positives are also common, and the more severe a nonadrenal illness, the more likely a false positive result. This test is preferred if an adrenal tumor is suspected.

- **ACTH Stimulation:** No longer recommended for diagnosis, as its sensitivity is poor, its cost is high, and it cannot differentiate between pituitary and adrenal forms. This test is more specific than LDDS, however, meaning that strongly positive results definitely indicate Cushing’s disease, and false positives are unusual, but false negatives are common.

This test is useful for monitoring treatment, and it is the only test that can be used for dogs currently being treated with corticosteroids. A low-normal or blunted response indicates iatrogenic Cushing’s (see sidebar, facing page). This may be the preferred test if symptoms are mild, for it is better to miss the diagnosis than get a false positive.

Test results must be considered in combination with symptoms. A dog with at least three of the typical signs plus a positive test is considered to have Cushing’s, but a dog with no signs but maybe high ALP and a positive test may not, in which case it’s best to take a wait-and-see approach. If signs are present but test results are negative, consider retesting in three to six months or test for atypical Cushing’s (see “Atypical Cushing’s and SARDS,” page 18).

## DETERMINING THE TYPE

Classifying the type of Cushing’s disease as pituitary or adrenal helps determine which treatment is best. The endogenous ACTH level is felt by many to be the most accurate method of identifying the type of Cushing’s, but this test is difficult to run, as serum must remain frozen during transport to the lab. Dogs with pituitary tumors have high ACTH levels, while those with adrenal tumors will have low or no measurable ACTH.

LDDS may be used for classification when a 4-hour sample is drawn. If the



8-hour sample is > 30 nmol/L and the 4-hour sample is < 30, or both are less than half of the baseline sample, the pituitary form is likely.

The high dose dexamethasone suppression (HDDS) test is similar to LDDS, but a high dose of dexamethasone is used. This test is done only on dogs already known to have Cushing's. Dogs with a pituitary tumor will show suppression in circulating cortisol levels 75 percent of the time, but those with adrenal tumors never show suppression.

Adrenal tumors can be seen on ultrasound 30 to 50 percent of the time. An adrenal tumor is suspected whenever one adrenal gland is observed to be enlarged while the other is not visible. If they have not spread, adrenal tumors should be removed, if possible, but surgery is difficult and usually requires a specialist.

Two normal or large adrenal glands indicate the pituitary form of Cushing's, although enlarged adrenal glands are also often seen in cases of nonadrenal disease due to the chronic stress of the illness. An MRI or CT scan can detect pituitary tumors and determine their size. Two-thirds of dogs with tumors greater than 10 millimeters initially will develop neurological signs and may benefit from immediate radiation therapy, even before signs are seen.

## MEDICAL TREATMENT

The best treatment for Cushing's disease depends on the severity of symptoms, type of Cushing's, risk of adverse effects, and cost factors. Medical therapy is used to control clinical signs, but it does not cure the disease. It is not likely to prolong life but does improve the dog's quality of life. Not treating is also a viable option, particularly if symptoms are minimal. In this case, complementary care may be especially useful; see "Complementary Care for Dogs With Cushing's," page 20.

If the dog suffers from a concurrent medical condition, it is important to treat and stabilize that illness if possible before treating for Cushing's. Treatment for dogs with concurrent nonadrenal illness, such as diabetes, is complex and beyond the scope of this article.

■ **Mitotane (Lysodren®)**, which is used for both pituitary and adrenal Cushing's, was the only treatment available until recent years. Mitotane is convenient and relatively inexpensive, but it has potentially severe side effects. A chemotherapy drug, it works by selectively eroding the two inner layers of the adrenal cortex that produce cortisol while tending to preserve the outer layer that makes aldosterone. If too much is eroded, the result is a cortisol deficiency.

About 30 percent of dogs treated with mitotane develop short-term reactions. If this happens, mitotane is discontinued and the dog is treated with prednisone until the adrenal glands recover. The destruction may be permanent, requiring treatment for atypical (or sometimes typical) Addison's. Mitotane's risk of a permanent or life-threatening Addisonian reaction is considered 2 to 5 percent.

Mitotane is given once or twice a day during the "induction" phase, during which adrenal erosion is induced. The drug must be given with food or it will not be absorbed. Mitotane should not be used for dogs with a poor appetite; inappetence indicates that something else is going on that must be diagnosed and addressed prior to beginning Cushing's therapy.

During the induction phase, caregivers should notify their veterinarians as soon as their dog experiences any appetite reduction, decrease in water consumption, diarrhea, vomiting, lethargy, or listlessness. It is important to watch for these signs starting around the third day of treatment. These symptoms indicate that the end of the induction has been reached and it's time for an ACTH stimulation test.

The induction time is variable, usually between 7 and 14 days, but some patients require just two to three days and others can take as long as six weeks, especially if they are being given other drugs that interact with Lysodren, such as phenobarbital or insulin. If there is no response, dosage can be increased or mitotane can be reformulated in an oil base to increase absorption, or the drug trilostane can be used instead.

When the ACTH test and clinical signs indicate that sufficient adrenal erosion has taken place, daily use (induction phase) is stopped and lifelong "maintenance" treatment once or twice a week is begun. The ACTH test can be repeated after about a month, then one to four times a year thereafter.

If vomiting, diarrhea, appetite loss, or listlessness occur at any time during treatment, the dog may need a prednisone "antidote" pill, which should produce improvement within 30 minutes to two hours. Your veterinarian will probably prescribe prednisone and discontinue mitotane for a couple of weeks after that, before resuming at a lower dose. If there is no improvement, something else is causing the symptoms.

## IATROGENIC AND PSEUDO-CUSHING'S

A *very* small percentage of Cushing's cases result from medical treatments for other conditions, such as the use of prednisone or other corticosteroid medications to control allergies, arthritis, or autoimmune conditions. This is called "**iatrogenic (doctor-caused) Cushing's**." In these cases, the Cushing's is treated by gradual discontinuation of the corticosteroid drugs (if the drugs are withdrawn too quickly, an Addisonian crisis can result). Patients can take as long as three months to recover after corticosteroid drugs are stopped.

Also known as Alopecia X, **pseudo-Cushing's** is identified by symmetrical alopecia (hair loss) on the trunk of the body, thighs, or neck, along with darkening of the skin where hair is lost. The coat's color may change as well. The condition does not cause itching.

Pseudo-Cushing's is seen in young dogs (ages 1 to 5) with plush coats, such as Pomeranians, Poodles, Samoyeds, Alaskan Malamutes, and Siberian Huskies. Pseudo-Cushing's is thought to be a mild form of pituitary-dependent hyperadrenocorticism.

Dogs with this disorder may respond to castration, methyltestosterone, melatonin, growth hormone supplementation, or one of the drugs used to treat Cushing's disease. One study showed that 90 percent of dogs with pseudo-Cushing's treated with trilostane responded within eight weeks.

About half of the dogs treated with mitotane relapse at some point and require a second round of induction, and their maintenance dose may have to be increased.

Marked improvement should be seen within six to eight weeks of starting the maintenance dose, with a full reversal of clinical signs after four to six months of treatment. Usually the first improvements are more normal water consumption, urination, and appetite, and the last is hair regrowth. Muscle strength and exercise tolerance improve over the first three to four weeks.

Mitotane can be used to treat adrenal

Cushing's, but a higher dosage is needed, resulting in more adverse reactions. The average survival time in this case is 16 months.

■ **Trilostane (Vetoryl®)**, used to treat both pituitary and adrenal Cushing's disease, inhibits the enzyme 3-beta-hydroxysteroid dehydrogenase, which is involved in the production of several steroids, including cortisol.

Because trilostane can block aldosterone as well as cortisol, it can cause side effects such as dehydration, weakness, and electrolyte changes (low sodium and high potassium). In this case, the medica-

tion must be stopped temporarily; some dogs may also require fluid support.

For reasons that are not understood, trilostane occasionally causes acute adrenal gland necrosis, which can occur within days of starting the drug or after several months. The condition is unpredictable and is not dose-dependent. It requires prompt treatment with fluid therapy, glucocorticoids, and mineralocorticoids or it can be fatal (Addisonian crisis). This complication is permanent and irreversible, and lifelong supplementation of both mineralocorticoids and glucocorticoids will be necessary (i.e., treatment for typical Addison's).

## ATYPICAL CUSHING'S AND SARDS

What if your dog has all the symptoms of Cushing's – excessive drinking, urination, and appetite; pot belly; skin problems; elevated alkaline phosphatase; etc. – but the tests say no?

Veterinary endocrinologists at the University of Tennessee in Knoxville (UTK) have been investigating this phenomenon. They found that many dogs have elevated steroid intermediates (also called steroid precursors or "sex steroids") with normal cortisol. They call this condition "atypical Cushing's disease," or "adrenal hyperplasia-like syndrome." It has been suggested that cases of atypical Cushing's disease may be caused by a problem in the steroid production pathway. Elevated steroid intermediates have been linked to **sudden acquired retinal degeneration syndrome (SARDS)**, which causes sudden blindness in dogs.

These steroid intermediate hormones include 17-hydroxyprogesterone (also called 17-OH progesterone or 17-OHP), progesterone, androstenedione, estradiol, and aldosterone. UTK developed a steroid hormone profile test to measure these hormones both before and after ACTH stimulation. Steroid hormone profiling is indicated when other tests of adrenal function are negative (ACTH stimulation and LDDS), but the dog still exhibits signs of Cushing's.

One or more of these steroid intermediate hormones are increased in affected patients, both before and after ACTH stimulation. Estradiol does not respond to either ACTH or dexamethasone, while 17-OHP shows an exaggerated response to ACTH administration in cases of both atypical and typical Cushing's.

Atypical Cushing's can be either pituitary or adrenal. Dogs with pituitary-dependent atypical Cushing's usually have an enlarged liver, hepatopathy (liver abnormalities), and enlargement of both adrenal glands, along with increased levels of endogenous ACTH. Dogs with the adrenal form will also have an enlarged liver and elevated liver enzymes, but in this case only one adrenal gland will be enlarged (the other may be atrophied), and endogenous ACTH levels will be decreased.

Both forms cause the usual clinical signs of Cushing's disease, including bloodwork changes and haircoat problems. If aldosterone is elevated, it can cause hypertension (high blood pressure), high sodium, and low potassium leading to muscle weakness.

In some cases, adrenal tumors can secrete other steroids besides cortisol, and cortisol levels may be normal. Ultrasound is recommended to confirm whether a tumor is present before beginning treatment. If a tumor is found, surgical removal is recommended, especially since noncortisol-secreting adrenal tumors are almost always carcinomas. If that is not possible, mitotane (Lysodren) is the next choice, although it will not affect estradiol levels, and these types of noncortisol-secreting adrenal tumors tend to respond poorly to medical treatment. Trilostane is not recommended, as it can cause increases in intermediate steroid hormones.

Elevated estradiol, called hyperestrinism or hyperestrogenism, causes many of the same signs as elevated cortisol does. In dogs with hyperestrinism, ACTH stimulation and LDDS tests are usually normal for cortisol, thyroid function is normal or controlled, and liver problems are frequent and typical (very high alkaline phosphatase, enlarged liver, and other liver abnormalities). Symptoms frequently include excessive drinking and urination, along with haircoat problems. Panting may also be present. A skin biopsy will suggest endocrine abnormalities.

Veterinarians at UTK advise treating atypical Cushing's and hyperestrinism with melatonin, which decreases cortisol and sometimes estradiol levels as well, and lignans, a type of phytoestrogen, which may also inhibit enzymes involved in the production of estradiol. Lysodren (mitotane) can be combined with melatonin and lignans to help lower sex steroid levels other than estradiol, along with suppressive effect on cortisol level. See Resources, page 22, for more information about UTK's suggested treatment protocols.



Trilostane is given once or twice a day with food. Side effects may be less common when given twice a day. Starting dosage is 1 to 3 mg per pound of body weight daily. Starting at the low end of that range is safest, even though the suggested starting dosage in the product brochure is higher.

Close monitoring in the beginning and after any dose adjustment is essential. Discontinue trilostane and contact your veterinarian immediately if signs of intolerance are seen. Common side effects include mild lethargy, vomiting, diarrhea, and appetite reduction, especially in the beginning. Most reactions

are minor and are reversed by decreasing the dose or discontinuing therapy, but serious or fatal Addisonian reactions are also possible. Side effects should be followed by electrolyte and ACTH testing. Once symptoms resolve, the drug can be restarted at a 50 percent dose reduction.

Most dogs show decreases in drinking, urination, and appetite within one week, but some may take two months or longer. Trilostane controls clinical signs in dogs with adrenal tumors, but will not slow tumor growth.

Trilostane may be safer than mitotane, as side effects tend to be less severe and most are reversible. The

risk of a permanent or life-threatening Addisonian reaction from trilostane is considered to be 2 to 3 percent.

Cost is trilostane's main disadvantage, though monitoring costs may be less than with mitotane. Baseline cortisol levels measured 4 to 6 hours after trilostane administration may provide adequate monitoring without the need for ACTH stimulation tests.

Trilostane seems to predispose dogs to increased adrenal toxicity from mitotane, so it's best to wait at least a month in between if switching to mitotane. When changing from another drug to trilostane, **Continued on page 22**

### Or is there another explanation?

Caroline Levin, a registered nurse who has been researching SARDS in dogs for years, has a different name for atypical Cushing's. She calls it adrenal fatigue or exhaustion, caused by the adrenal glands becoming too tired to make sufficient cortisol.

Levin says, "When adrenal glands become exhausted they increase production of adrenal estrogen. This is an overwhelming pattern in SARD dogs. Ninety to 98 percent of dogs tested have elevated estrogen and/or other sex hormones – in other words they have adrenal exhaustion.

"Increased estrogen causes signs that closely resemble those of excessive cortisol," continues Levin, "including fatigue, confusion, depression, incontinence, irritability, seizures, and darkening of the skin. Elevated estrogen raises liver/pancreas enzymes (serum amylase/alkaline phosphatase), cholesterol, and triglycerides. Elevated estrogen also results in kidney degeneration, bone marrow and immunoglobulin suppression (anemia, cancer, infections, GI upset), increased histamine activity (allergies/itching), and thyroid binding."

Even slightly elevated estrogen in combination with symptoms such as lethargy, confusion, panting, excessive appetite, and incontinence is significant, according to Levin. Prolonged exposure to excessive estrogen decreases quality of life and can cause gradual damage to internal organs such as the kidneys, liver, and brain.

In addition to problems caused by estrogen, Levin says, "Elevated levels of hormone precursors, such as progesterones and androgens, cause impaired glucose tolerance (high blood glucose levels), obesity, increased body core temperature (heat intolerance/panting), increased hunger, aggression, thick coats, acne (small flesh-colored bumps), and bald patches. Severely depleted cortisol can result in loss of appetite, vomiting, abdominal pain, diarrhea, weakness, organ failure, and death."

As an alternative to the full steroid hormone profile offered by UTK, Levin suggests a faster, less expensive test for adrenal ex-

haustion: the Endocrine/Immune panel at National Veterinary Diagnostics Services (see Resources, page 22). This test measures total estrogen (not just estradiol), cortisol, T3 and T4 thyroid levels, and IgA, IgG, and IgM immunoglobulin levels. (Levin has no affiliation with either facility.)

Most dogs with adrenal exhaustion show low cortisol levels, though they may rise to the challenge of an ACTH stimulation test. A small minority may appear to have elevated cortisol, but elevated adrenal estrogen and elevated cortisol do not occur at the same time. "Under chronic stress," Levin explains, "some dogs appear to have normal or even high cortisol levels due to inactive hormone isomers and precursors that cannot be differentiated from cortisol on tests."

Practitioners familiar with this protocol treat dogs with corticosteroids, thyroid supplementation, and sometimes sulfasalazine when IgA levels are very low. Levin also recommends reducing stress as much as possible. She believes that melatonin and particularly mitotane interfere with cortisol production, which she perceives as the underlying problem.

According to Levin, prompt treatment following onset of SARDS can restore vision in more than 20 percent of cases. Other conditions that can be linked to adrenal exhaustion that may respond to treatment include poorly controlled diabetes or pancreatitis (because elevated estrogen raises glucose, cholesterol, triglyceride, and lipase levels); poorly controlled epilepsy (elevated estrogen reduces seizure threshold and increases nerve cell transmissions); poorly controlled inflammatory bowel disease (IBD) or allergies (elevated estrogen suppresses immunoglobulin levels and increases histamine levels); and poorly controlled Cushing's disease or atypical Cushing's.

While these theories are considered controversial and are not accepted by most conventional veterinarians, many dogs do well with the unconventional approach, especially those with SARDS. Some dogs may do well with the more conventional treatment, particularly if an adrenal or pituitary tumor is the underlying cause, or when estrogen is not elevated and SARDS is not a factor. For more on Levin's suggested protocol, see page 22.



## COMPLEMENTARY CARE FOR DOGS WITH CUSHING'S

Because the diagnosis and treatment of Cushing's disease can be confusing, expensive, and fraught with adverse side effects, many caregivers turn to alternative or complementary therapies.

For those who prefer treatments that have been proven in double-blind, placebo-controlled clinical trials, unconventional therapies are themselves fraught with peril. Product testimonials and anecdotal reports don't prove anything, and by turning first to an herbal preparation or glandular extract, one might deny the patient an opportunity for effective treatment. Online reviews of nutritional supplements or herbal preparations range from reports about dogs that appear to be cured to heartbreaking stories of dogs whose condition deteriorated rapidly. Success stories are often not documented by laboratory test results, leaving readers to wonder whether the dogs that improved so dramatically actually had Cushing's.

At the same time, the cost of veterinary tests, surgery, or prescription drugs for a dog is sometimes simply prohibitive. Because drugs can only relieve symptoms and cannot cure Cushing's disease or slow its progression, there is little harm in trying alternatives if your dog's quality of life is not impacted.

For some, the decision to pursue nutritional and alternative treatments is philosophical. Holistic veterinarians look at Cushing's disease and every other canine illness from a different perspective than do conventionally trained veterinarians. They are likely to try holistic or natural treatments first and turn to symptom-suppressing conventional therapies later instead of the other way around.

Phosphatidylserine (PS), a phospholipid derived from lecithin, has been demonstrated to have a natural cortisol-suppressive effect on the adrenal glands. It can also help with cognitive dysfunction. Oral PS is available both by itself and in many combination supplements.

Elizabeth Knight, of Portland, Oregon, had some success using PS to treat her Welsh Corgi, Jasper, who was diagnosed with Cushing's at age 11 and lived for two more years. "Two substances worked very well for us. For quite a while phosphatidylserine helped him a great deal with restlessness. And a Chinese herbal formula, Si Miao San, also helped with his restlessness and thirst. His polydipsia and polyuria (excessive drinking and urination), pacing, and panting were controlled fairly well. I would say they helped about 80 percent." Knight suspects that Jasper also had canine dementia.

In their book *Herbs for Pets*, Greg Tilford and Mary Wulff recommend herbal therapy to support organs and systems that are subjected to additional stress because of the disease. "Dandelion root, burdock, garlic, and nettle are good choices for supporting an overtaxed liver and digestive system and to help replace potassium that is lost as a result of increased urination. Adaptogenic herbs such as Siberian ginseng or astragalus help buffer adrenal response to stress." They also recommend avoiding licorice, borage leaf, and other herbs that stimulate adrenal activity.

Susannah Blanchard of Wilmington, North Carolina, turned to holistic treatments when her 10-year-old Shih Tzu, Bandit, was diagnosed with pituitary-based Cushing's. "At that time," she says, "the conventional treatment was Lysodren [mitotane], but

I had a really hard time putting him on something that could induce Addison's disease and was almost restrictively expensive. So I researched and found Cushex, a blend of homeopathic and herbal ingredients from PetAlive/Native Remedies. We moved around some, and every new vet who saw Bandit was amazed that he had a Cushing's diagnosis. I credit the Cushex for keeping his coat rather thick with none of the thinning that generally accompanies Cushing's disease. Bandit lived another five years and passed away last June at age 15. Only in the last few months of his life did his coat and tailfeathers start to visibly thin out."

(Editor's note: Bandit's initial diagnosis was never confirmed by later testing; it's possible that his original symptoms were caused by something other than Cushing's.)

Another plant-based product is Canine Vitex Plus (formerly called Cush X) from the English company Hilton Herbs. Medical herbalist Hilary Self, the director of Hilton Herbs, created the formula nine years ago for dogs with Cushing's caused by adrenal

adenoma. "However," she says, "a virtually identical product formulated for equine Cushing's disease, which is caused by pituitary adenoma, has proved to be equally successful. I would anticipate that it would work equally as well in dogs with pituitary adenoma."

The formula is added to the dog's meals. "Symptoms usually respond



**Bandit did well with natural therapy for five years following a diagnosis of Cushing's disease.**

**Hilton Herbs, a British company that makes herbal and nutritional supplements for dogs and horses, has a product for dogs with Cushing's called Canine Vitex Plus (formerly Cush X).**



within three weeks," Self says. "The supplement is by no means a cure, but it has proved to be beneficial to many dogs. It has enabled many owners to either delay having to use the conventional drugs or even reduce a drug's dosage over a period of months if the dog is already on it. If the dog is on medication, it is vital for the dog's veterinarian to carry out regular blood tests to measure the response."

Glandular supplements can also support the adrenal glands. "I think highly of Standard Process glandular products," says Anita Moore, DVM, of Anne Arundel County, Maryland. "SP Canine Adrenal Support contains 'functional foods,' which are ingredients that have shown to benefit various organs and tissues in the body. It helps normalize adrenal function, making it appropriate for dogs with both Cushing's and Addison's disease. It doesn't cure either illness, but it may help improve symptoms, as it has done with some of my patients."

Diets for dogs with Cushing's disease should be high in protein, which can help to combat muscle wasting; high-protein diets are also good for the skin and immune system. Fat should be moderately low, as Cushing's predisposes dogs to hyperlipidemia (elevated cholesterol and triglycerides) and pancreatitis.

There is a lot of outdated information on the web about Cushing's dogs needing a low-fiber, low-purine diet. It all appears to come from a single source, which references the third edition of *Small Animal Clinical Nutrition* (Lewis, et al, 1987). The newer fourth edition (Hand, et al, 2000), however, has no reference to purines, nor does it make any sense to restrict purines for dogs with Cushing's.

The newer edition of *Small Animal Clinical Nutrition* also suggests that a diet "lower in fat (less than 12 percent dry matter) and moderate in crude fiber (8 to 17 percent DM) . . . may aid in weight loss and control of mild hyperglycemia . . . in dogs with glucocorticoid-induced carbohydrate intolerance" as well as hyperlipidemia. Some of this reasoning is questionable, but the point is that it no longer recommends a low-fiber diet.

Dogs with Cushing's are predisposed to the development of calcium oxalate bladder stones, due to elevated calcium in their urine. Avoid giving excessive calcium, which might be a



**Mascara, a Husky-Malamute mix, was diagnosed with Cushing's when she was only 5 years old. Her symptoms initially improved with a variety of natural treatments combined with Anipryl and thyroid supplements.**

contributing factor. Feeding a low-oxalate diet with other modifications, such as avoiding vitamin C, might be helpful (see "Stoned Again?" WDJ May 2010). Keeping your dog well-hydrated and allowing frequent urination can also help prevent stone formation. Make sure fresh water is available at all times.

It is not unusual for dogs with Cushing's disease to graduate from holistic therapies to conventional treatments or to take both

at the same time. Three years ago Stacy McDaniel of Kingman, Arizona, noticed that her Husky/Malamute, Mascara, was gaining weight, drinking, and panting more than other dogs. In addition, Mascara had a voracious appetite and was greedy and protective of her food. (She lives with four other Husky/Malamutes.)

"The closest holistic vet I could find was 100 miles away in Las Vegas, Nevada," says McDaniel. "Mascara was placed on Energetix BioBalancer [no longer available], Rehmannia (a Chinese herb), melatonin spray, and essential oils. I also used selegiline [Anipryl]. Most Cushing's dogs have a thyroid problem, and Mascara was

placed on thyroid medication. This combination seemed to work, and every follow-up test was within the appropriate range until she was tested in February 2011."

That's when Mascara's medication was changed from Anipryl to Lysodren (mitotane). "What a difference," says McDaniel. "Mascara even acted different. She was like a puppy again, playing and jumping. I was

initially terrified of Cushing's, but I now understand it and have respect for the treatments that are available.

"Mascara will always be on her medication. Without it she would die an early death due to the havoc excessive cortisol wreaks on the body. I am all about the quality of life for my dogs, and right now, she has an amazing life."



**When her test results worsened, Mascara (right, shown with one of McDaniel's other dogs) was switched to Lysodren, and is now acting like a puppy again.**

## RESOURCES

- ❖ **UNIV. OF TENNESSEE, KNOXVILLE, CLINICAL ENDOCRINOLOGY SERVICE**  
www.vet.utk.edu/diagnostic/endocrinology  
See "Treatment Considerations" for additional information.
- ❖ **CAROLINE LEVIN, R.N., RESOURCES FOR OWNERS OF SARD DOGS**  
(503) 631-3491; petcarebooks.com/research.htm
- ❖ **NATIONAL VETERINARY DIAGNOSTICS SERVICES**  
(281) 661-4292; national-vet.com

## PRODUCTS

- ❖ **CANINE VITEX PLUS FROM HILTON HERBS**  
(866) 929-0636; hiltonherbsusa.com
- ❖ **CUSHEX DROPS BY PETALIVE, BY NATIVE REMEDIES**  
(877) 289-1235; petalive.com

## ONLINE SUPPORT GROUPS

- ❖ **GROUPS.YAHOO.COM/GROUP/CANINECUSHINGS-AUTOIMMUNECARE/**
- ❖ **K9CUSHINGS.COM/FORUM**

### Continued from page 19

wait a couple of weeks or until clinical signs recur. This drug is not recommended for dogs with liver or kidney disease.

■ **Ketoconazole (Nizoral®)** is used to treat both adrenal and pituitary Cushing's. This antifungal medication suppresses adrenal hormones in about 80 percent of dogs as a side effect.

A low dose is used for a week; then, if no side effects are seen, a higher maintenance dose is used. It is not possible to induce Addison's disease with ketoconazole, so monitoring tests aren't needed, other than after a month or so to determine if the medication is working.

Side effects can include vomiting and diarrhea, but no "antidote pill" is needed. Just discontinue until side effects go away, then restart at a lower dose.

Ketoconazole's disadvantages are that

it must be given twice a day indefinitely and its effect may be mild or temporary. This drug may reduce clinical signs in up to 30 percent of dogs with adrenal tumors, but side effects are common.

■ **L-Deprenyl (Anipryl® or selegiline)** is used to treat pituitary Cushing's only. It is also used to treat canine cognitive dysfunction.

L-Deprenyl works by inhibiting ACTH secretion via high dopamine levels in the intermediate pituitary area, where 30 percent of pituitary tumors are located, and may work only for dogs with such tumors. This drug has no serious side effects, but approximately 5 percent of patients experience minor nausea, restlessness, or reduced hearing. It cannot induce Addison's disease, and no monitoring is required.

Because it's difficult to determine

## What you can do . . .

- **Don't dismiss changes in your dog as normal aging. Your veterinarian may find an underlying, treatable cause.**
- **Treatment for Cushing's can improve quality of life for your dog. Don't be afraid to try drugs when needed.**
- **Watch closely for signs such as lack of appetite that may indicate drugs need to be stopped or dosage adjusted.**
- **If your dog has all the signs of Cushing's but tests are negative, consider atypical Cushing's or adrenal exhaustion as a possible cause.**



whether the drug is working, and it may take considerable time to take effect, few veterinarians report good results. However, because some dogs improve and its safety margin is high, it may be worth trying in dogs with mild symptoms that are progressing slowly. L-Deprenyl can be combined with mitotane or trilostane for dogs with cognitive dysfunction, and it may increase the dog's activity level and quality of life.

Anipryl is not recommended for dogs who also have diabetes, pancreatitis, heart failure, renal disease, or any other serious illness. 🐾

*Freelance writer CJ Puotinen lives in Montana. She is the author of The Encyclopedia of Natural Pet Care and other books and a frequent contributor to WDJ. See "Resources," page 24 for book purchasing information.*

*Mary Straus is the owner of DogAware.com. She and her Norwich Terrier, Ella, live in the San Francisco Bay Area.*

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 RESOURCES 

### TRAINING AND INSTRUCTION

- ❖ **Stephanie Colman**, Caninestein Dog Training, Los Angeles, CA. Caninestein Dog Training offers training for basic-advanced obedience, competition dog sports, problem-solving, and much more! Private lessons and group classes. (818) 989-7996; [caninesteintraining.com](http://caninesteintraining.com)
- ❖ **Pat Miller**, CBCC-KA, CPDT-KA, CDBC, Peaceable Paws Dog and Puppy Training, Fairplay, MD. Train with modern, dog-friendly positive methods. Group and private training, rally, behavior modification, workshops, intern and apprentice programs. Trainers can become "Pat Miller Certified Trainers" (PMCT) by successfully completing Pat's Level 1 (Basic Dog Training and Behavior) and both Level 2 Academies (Behavior Modification and Instructors Course). (301) 582-9420; [peaceablepaws.com](http://peaceablepaws.com)
- ❖ **Sarah Richardson**, CPDT-KA, CDBC, The Canine Connection, Chico, CA. Training, puppy classes, socialization sessions, "playcare," boarding. Force-free, fun, positive training. (530) 345-1912; [thecanineconnection.com](http://thecanineconnection.com)

### HOLISTIC VETERINARIANS

- ❖ **American Holistic Veterinary Medical Association** (AHVMA). PO Box 630, Abingdon, MD 21009. Send a self-addressed, stamped envelope for a list of holistic veterinarians in your area, or search [ahvma.org](http://ahvma.org)

### BOOKS AND DVDS

- ❖ WDJ Training Editor Pat Miller is author of *Positive Perspectives: Love Your Dog, Train Your Dog; Positive Perspectives 2: Know Your Dog, Train Your Dog; Power of Positive Dog Training; Play With Your Dog*; and *Do Over Dogs: Give Your Dog a Second Chance at a First Class Life*. Available from Dogwise, (800) 776-2665 or [dogwise.com](http://dogwise.com)
- ❖ *The Encyclopedia of Natural Pet Care and Natural Remedies for Dogs and Cats*, by WDJ contributor CJ Puotinen, are available from DogWise, (800) 776-2665 or [dogwise.com](http://dogwise.com). Puotinen is also author of several books about human health, including *Natural Relief from Aches and Pains*.

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