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Giving Back

Time to volunteer to help other dogs.

BY NANCY KERNS

don't have a dog right now. Mokie, the Chihuahua I've had for the past three years – the one who used to be my sister's dog – is now living with my *other* sister. For complicated reasons, I'm splitting my time between two homes, in two towns, and dragging a dog through all this just isn't practical or fair. Mokie "vacationed" with Pam's family while I was moving, and fit into their home and hearts so well, we decided it was best for him to stay there.

I do miss that little muffinhead, though, and miss having a dog with me at all times. To cope, I'm getting my dog-hair and dogbreath fix at an animal shelter that's close to one of my homes.

I'm lucky; the shelter is a brand-new and spacious facility, the culmination of years of fundraising and planning by its director and board. The staff has been reenergized by the move to the new location; everyone seems highly committed to doing what's best for the animals. And volunteers are in short supply, so anything I've offered to do has been eagerly accepted. I'm walking dogs, washing dogs, and training dogs to sit quietly in front of their cage doors when approached. The other day, as I was doing this, two young girls who were also volunteering came over to watch - and within an hour (and a pound of canine cookies) they had every dog in the shelter sitting or lying down quietly the moment someone stepped in front of them.

So, while I do certainly miss having my own dog, and would love to take four or five home with me, I'm going to try to wait until I get my life better stabilized. The company of dogs has sustained me so much over my lifetime, starting before I can even remember. My resolution for 2007 is to spend time trying to give something back to dogs - not just one dog - in gratitude.

Another good thing I've been able to offer the shelter is a *bunch* of dog food! My office always becomes a bit unmanageable around the time of WDJ's annual dry dog food review, which is featured in this issue. It's a pleasure on many levels to pack all the food into my car and haul it to the shelter.

This was the tenth time I have reviewed dry dog foods for WDJ. In 1998, when the magazine was first published, I was hardpressed to find more than a dozen or so foods that contained whole meats, grains, and vegetables. Today, there are scores of these foods on the market, and the variety and quality level continues to rise; check them out, starting on page 6.

This issue also contains a welcome article from Greg Tilford, a highly respected expert on herbal medicine for animals (see page 16). Greg has offered to answer some of our readers' questions about herbal remedies for dogs. You can e-mail your question to Greg at WDJHerbQuestion@aol.com. He'll select a few and we'll publish his responses in an up-

coming issue.



Of course, this issue also contains the usual practical advice on positive training and holistic health. I hope you enjoy it.

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

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Take It With a Block of Salt

Foods that are labeled "complete and balanced" may not be either. (And if they're NOT labeled "complete and balanced," you're on your own!)

BY NANCY KERNS

ot all that long ago, selecting a dry food for your dog was pretty simple. What brand (singular) did your local pet supply store carry? What size bag did you want? And would you like some help out with that, ma'am?

Today, making a choice of dry foods can be immensely more complex – that is, if you buy into the notion that not all "complete and balanced" diets are equal. There are millions of people, after all, who think that all dog foods *are* alike, and that you'd have to be an idiot to spend \$30 or \$40 or \$50 on the same-sized sack of what you can buy for \$7.99 at Wal-Mart.

We're here to testify that there *is* a difference between those \$7.99 foods and the high-dollar products. And, while the task isn't exactly brain surgery, choosing the best foods for your dog requires your attention and consideration of numerous factors.

First things first

Our task today is to dispense with a common misconception – one so prevalent, that even many veterinarians swear it's accurate. Many people believe that all dog foods that are labeled as "complete and balanced" are equally appropriate and healthful for your dog. It's *so* not true.

"Complete and balanced" sounds good – unambiguous in its assertion that a product so labeled contains everything, in just the right amounts and proportions, that a dog needs to live a long and healthy life. But, as Bob Dylan sings, "The truth was *far* from that."

In reality, there is a huge amount of variation in the nutrient levels of pet foods that are labeled "complete and balanced." I'd like to start taking the quotation marks off that expression, believe me, but I just can't. The phrase *must* be taken with a handful of salt. Yet few ever stop to question how it's possible for a food containing,

say, 42 percent protein and 22 percent fat (like Innova Evo), to be just as "complete and balanced" as a food containing 21 percent protein and 4 percent fat (like Purina Kibbles and Chunks).

Maybe you're okay with that; maybe you expect to see disparity in the amounts of macro-nutrients (protein and fat) in dog foods, especially since there is so much variety in their ingredients. It may surprise you to learn, though, that there is also a wide range of *micro*-nutrient (vitamin and mineral) levels represented in different "complete and balanced" dog foods.

And it may *shock* you to learn that a food can be labeled as "complete and balanced" even if it contains nutrient levels that are deficient, excessive, or imbalanced enough to cause illness in a dog fed a sole diet of that food for a number of years!

I'll explain how this is possible – and you'll see why I can't take the quote marks off the phrase in question.

Which test did it pass?

Pet foods can earn the right to use the "complete and balanced" nutritional adequacy statement in one of three ways: by successfully completing a feeding trial, by meeting the "nutritional levels" requirements as set by the Association of American Feed Control Officials (AAFCO), or through a so-called "family member."

No matter which method is used to prove its adequacy, the "complete and bal-

anced" claim must specify the population of dogs the food is supposed to be able to sus-

tain: adult dogs (a "maintenance" claim); puppies ("growth"); gestating or lactating females; or dogs in "all life stages" (all of the above).

In an AAFCO feeding trial, the candidate product is fed to a minimum number of dogs for a specified period. For the food

What you can do . . .

- Scrutinize the label of every bag of dry dog food you buy. Examine the nutritional adequacy statement, the "guaranteed analysis," the feeding instructions, the list of ingredients (of course!), and the date-code (to make sure it's fresh).
- Call the food manufacturer if you have <u>any</u> questions about the food. If the representatives are less than helpful, select another product.

to pass the trial, no more than 25 percent of the dogs can be removed from the study for "non-nutritional reasons or for poor food intake." No dog in adult studies can lose more than 15 percent of its body weight during the trial. In the trials that include puppies, the pups must gain specified percentages of weight. The test dogs must also pass other fairly liberal tests of their "health." (Note: We described feeding trials in much more detail in "On Trial," April 2005.) If the food passes, it gets to carry a statement that looks like this:

Nutritional Adequacy Statement: Animal feeding tests using AAFCO procedures substantiate that By Nature Active Formula provides complete and balanced nutrition for all life stages.

The second way for a food to earn the "complete and balanced" appellation is to demonstrate (through laboratory analysis) that the food contains a concentration of nutrients that meets all the minimum levels, and does not exceed the maximum levels, of certain nutrients determined by AAFCO to be necessary to maintain the intended canine consumers. If all of the values for each required nutrient fall into the ranges approved by AAFCO, the food gets to carry a statement that looks something like this: don't like the smell or taste of the food, they won't eat enough of it to gain its nutritional benefits. Also, the nutrients contained in a product may not be present in a form that the dog can digest.

Another problem lies within the AAFCO nutrient profiles

Nutritional Adequacy Statement: By Nature Adult Formula is formulated to meet the nutritional levels established by the AAFCO Dog Food Nutrient Profiles for maintenance.

You could say that nepotism is the third method of achieving "complete and balanced" status. If a manufacturer can demonstrate that a new product bears a "nutritional similarity" to one of its products that has already passed an "all life stages" feeding trial, the new "family member" can be labeled with the same feeding trial claim.

Problems with each test

Each method of qualifying for a nutritional adequacy claim has its faults, to wit:

■ Foods that pass feeding trials are not required to contain minimum or maximum levels of any particular nutrients. Therefore, it's possible for a food to sustain dogs long enough to "pass" the trial, but fail to demonstrate an ability (in real-world, longterm use) to promote optimum health. As one example, mineral excesses may take a year or more to cause noticeable health problems, but a food that claims to provide complete and balanced nutrition for adult dogs (a "maintenance" claim) may have passed only a 26-week test.

There is also an AAFCO feeding trial (at least 13 weeks long) for products intended for dogs during gestation and lactation and another that tests puppy diets (10 weeks). To earn the right to claim nutritional adequacy for dogs of "all life stages," a food must undergo all three trials sequentially, for a total of 49 (or more) weeks. If it passes, its label can state, "Animal feeding tests using AAFCO procedures substantiate that (name of product) provides complete and balanced nutrition for all life stages."

Many experts regard the "all life stages" feeding trial as the best proof we have of a food's ability to perform. But again: Even a year-long feeding trial may fail to reveal faults that can cause serious health problems if fed as a sole diet for a long period.

■ Foods that meet the "AAFCO nutritional profiles" qualification can lack palatability and/or digestibility. If dogs are aware that the profiles allow for a *wide* range of values. Far from being some sort of industry "standard," or offering suggestions for *optimum* nutrition,

themselves: Not

many lay people

they actually offer only broad guidance. The profiles outline minimum values for each nutrient currently proven to be required for dogs. Also included are maximum values for eight minerals and three vitamins, out of concern for potential toxicosis if excessive levels of those nutrients are fed.

The spread between the al-

lowed minimum and maximum values reveals just how far the industry is from consensus about "ideal" nutrient levels – or, perhaps, how little research has been conducted in this area.

This latter explanation is actually offered by AAFCO itself, to explain why more maximum nutrient levels are not defined: "The absence of a maximum should not be interpreted to mean that those nutrients are safe at any level. Rather, it reflects the lack of information on nutrient toxicity in dogs and cats. Establishing a maximum level implies safety below that level and to set a maximum arbitrarily might prove worse than no maximum at all."

One of the most striking gaps occurs in the levels allowed for iron. The minimum value is 80 mg per kg; the maximum is 3,000 mg/kg. One can well imagine that a food containing something near the minimum will perform very differently from one containing an amount closer to the maximum allowable level.

These profiles are better than nothing; they get a pet food maker into the ballpark. But in our opinion, it's farcical to qualify all the products with such a wide range of nutrient levels as "complete and balanced" – especially with the common mistaken inference that all the products carrying that statement are somehow equal.

■ Foods that use the "family member" route to qualification are not required to be distinguished from the family member that actually passed the "all life stages" feeding trial. This seems like the sneakiest path to a nutritional adequacy claim. There is no way for a consumer to learn which food in a manufacturer's "family" was the "lead" product – the one that actually passed the feeding trial – and which ones are hanging on its coattails. Imagine: a food that is identified as having met the most stringent test, without having been tested at all.

The concern here is that a food might appear "nutritionally similar" enough to its lead product to garner access to the approved "family," while lacking some vital characteristic that was key to its predecessor's success.

Other claims you might see

There are a few other claims seen on pet food labels. Here is an interesting one:

Canine Formula is intended for intermittent or supplemental feeding only.

If the label states that the food is "intended for intermittent or supplemental feeding only," it *can* mean the maker really intends for the food to supplement other products, that it really *isn i* complete or balanced. But the statement is also used sometimes when the food has some nutritional values that are out of the range of the AAFCO profiles, and it hasn't yet passed a feeding trial.

Here is another:



Notice anything missing? It's lacking the AAFCO reference! Without referencing either the AAFCO nutritional values or AAFCO feeding trials, it has to be lumped into the category of products that carry *no* statement about their completeness. In these cases, you are totally on your own.

Final consideration

One last thing: Feeding trials (especially the three sequential trials needed to garner an "all life stages" claim) are *wildly* expensive. The pet food industry giants have the resources to conduct these trials routinely, and as a result, most of their foods carry the "feeding trials" claim. Again, this statement carries the most weight with many veterinary nutritionists (even though the food may not meet all the AAFCO "nutritional levels" values).

Smaller, independent companies – the ones that make the foods we tend to like – often conduct their own, informal feeding tests to work out palatability and digest-

ibility issues, but can't easily afford to conduct AAFCO-protocol trials. That's why many products on our "top foods" list carry the "nutritional levels" claim.

Compare for yourself!

We hope we've inspired you to go take a gander at that last bag of dog food you bought – or, more importantly, to examine the labels of several foods before you buy the *next* bag.

We've been busy examining labels ourselves. On the following pages, we've listed

dry dog foods that meet our selection criteria. Our methodology is described in "WDJ's Dry Dog Food Selection Criteria," right. Regarding our list of foods, please also consider the following:

■ The foods on our list are not the only good foods on the market. The list is offered as a starting place and for its value as a comparison to products you may find in your local area.

As an addendum to this point, if the variety we describe doesn't suit your needs, check its maker's website or call their toll-free phone number to get information about the other varieties in the same line.

■ We have presented the foods on our list alphabetically. We do not "rank order" foods. We don't attempt to identify which ones are "best," because what's "best" for every dog is different.

■ The proof is in the pudding. If your dog does not *thrive* on the food, with a glossy coat, itch-free skin, bright eyes, clear ears, and a happy, alert demeanor, it doesn't matter whether we like it or not.

And if your dog's health or attitude sours under the influence of a certain food, stop feeding it, note the ingredients, and find another food that contains different ingredients. Keep your notes! Sometimes it takes several years of detective work to find products that really suit your dog.

■ Remember that quality comes with a price. These foods may be expensive and difficult to find. Contact the maker and ask about purchasing options. If the customer service representatives are less than helpful, move on to another product. As you'll see from our list on the following pages, there are plenty from which to choose.

WDJ's Dry Dog Food Selection Criteria

Our selection techniques are not secret or beyond any dog owner's abilities. We didn't conduct laboratory testing, or feeding trials, or even taste tests! To generate the list of top-quality foods that appears on the following pages, we simply examined the ingredients listed on the product labels.

• We look for foods that contain a lot of high-quality animal proteins. We'd love manufacturers to disclose the percentage of meat, poultry, or fish in their food, but they rarely do, so we look for foods that *appear* to have lots of animal protein. Ingredients are listed by weight, so ideally a food will have one or two animal proteins in the first few ingredients.



If we highlighted a variety that doesn't work for your dog – fish, say, instead of lamb, don't fret. Usually, products in the same line are similarly formulated.

Understand that whole meat (chicken, beef, lamb, etc.) contains a lot of water weight. If a food list starts out with chicken (rather than chicken meal), and there is no other animal protein listed until 7th or 8th on the list, the food does *not* actually contain a lot of animal protein. But if it starts out with chicken, and chicken meal (or another named animal meal, such as lamb meal) is number two or three on the list, chances are the product contains an admirable amount of animal protein. Animal proteins tend to be more palatable *and* bioavailable than plant proteins and offer a wider array of essential and nonessential amino acids.

• We reject any food containing meat by-products or poultry by-products. It's just about impossible to ascertain the quality of by-products used by a food manufacturer. We've spoken to representatives who swore they used only the finest sources of by-products, but when asked, they *all* say that! The

fact is, there is a much wider range of quality in the by-products available for pet food manufacturing than there is for whole meats. Whole meats are expensive, and because they are expensive, dog food makers insist on their quality to an extent that is unreasonable when buying bargain-basement by-products. So we advise that you just avoid foods that contain by-products.

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

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

• We eliminate all foods with artificial colors, flavors, or preservatives listed on their ingredients panels. A healthy product full of top-quality ingredients shouldn't need non-nutritive additives to make it look or taste better. And plenty of good natural preservatives (such as rosemary, and vitamins A and C) can be used instead.

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

• We look for products containing organic ingredients. That's a no-brainer.

WDJ'S 2007 TOP APPROVED DRY DOG FOODS

SAMPLE VARIETY, FIRST 6 INGREDIENTS, MIN % PROTEIN, FAT; MAX % FIBER, MOISTURE MAKER, CONTACT INFO Addiction Foods*1 Wild Kangaroo & Apples Formula: Kangaroo meat, rice, sorghum, flaxseed oil, linoleic acid, Addiction Foods Pte Ltd Duxton Hill, Singapore dried apples . . . (65) 6227-8813 addictionfoods.com 25% protein; 12% fat; 1.5% fiber; 10% moisture Artemis Power Formula: Chicken meal, white rice. Artemis Pet Foods chicken fat, lamb meal, dried beet pulp, ground North Hollywood, CA brown rice . . . (800) 282-5876 artemiscompany.com 30% protein; 20% fat; 4% fiber; 10% moisture Azmira Classic Formula: Beef meal, whole ground Azmira Holistic Animal Care barley, oatmeal, whole ground grain sorghum, Tucson, AZ flaxseed, canola oil . . (800) 497-5665 azmira.com 22% protein; 8% fat; 4% fiber; 10% moisture **Back to Basics** Chicken Formula: Chicken meal, ground corn, **Beowulf Natural Foods** chicken fat, oatmeal, brown rice, dried tomato Syracuse, NY pomace. (800) 219-2558 beowulfs.com 23% protein; 19% fat; 4% fiber; 10% moisture **Bench & Field** Holistic Natural Formula: Chicken meal, ground **Holistic Natural Canine** brown rice, whole ground barley, fish meal, Bench & Field Pet Foods chicken, chicken fat . Mishawaka, IN (800) 525-4802 24% protein; 15% fat; 4.9% fiber; 10% moisture benchandfield.com **Blue Buffalo** Chicken Formula: Chicken, chicken meal, whole The Blue Buffalo Company ground brown rice, whole ground barley, rye . . . Wilton, CT (800) 919-2833 25% protein; 14% fat; 4% fiber; 10% moisture bluebuff.com Burns Brown Rice & Ocean Fish Formula: Brown rice, Burns Pet Nutrition ocean fish meal, peas, oats, chicken fat, Chesterston, IN sunflower oil . . (877) 983-9651 bpn4u.com 18.5% protein; 7.5% fat; 2.2% fiber; 9% moisture by Nature BrightLife BrightLife Canine Formula: Chicken meal, lamb by Nature Pet & Animal Feeds meal, whole ground barley, ground rice, whole Londonderry, NH ground oats, chicken fat . . (800) 367-2730 bynaturepetfoods.com 28% protein; 18% fat; 5% fiber; 11% moisture by Nature Organics*2 Chicken Formula: Organic chicken, chicken meal, by Nature Pet & Animal Feeds organic ground brown rice, organic ground oats, Londonderry, NH organic ground barley, lamb meal . . (800) 367-2730 bynaturepetfoods.com 28% protein; 14% fat; 4% fiber; 10% moisture **California Natural** Chicken Meal & Rice Formula: Chicken meal, Natura Pet Products ground brown rice, ground white rice, sunflower Santa Clara, CA oil. natural flavors, taurine . . (800) 532-7261 naturapet.com 21% protein; 11% fat; 4% fiber; 10% moisture

NOTES ON SELECT FOODS, INDICATED ABOVE WITH *

Addiction Foods*1

New to our list for 2007 – and a prime example of the trend toward the use of exotic proteins. This food is manufactured in Australia and currently available in stores only in Seattle and Portland, Oregon. But it can be direct-shipped to your door.

FOODS THAT ARE NEW TO THE LIST APPEAR IN GREY BOXES

MAKER, CONTACT INFO	SAMPLE VARIETY, FIRST 6 INGREDIENTS, MIN % PROTEIN, FAT; MAX % FIBER, MOISTURE
Canidae Canidae Corp. San Luis Obispo, CA (800) 398-1600	All Life Stages Formula: Chicken meal, turkey meal, brown rice, white rice, lamb meal, chicken fat
canidae.com	24% protein; 14.5% fat; 4% fiber; 10% moisture
Canine Caviar Canine Caviar Pet Foods Yorba Linda, CA (800) 392-7898	Lamb & Pearl Millet Formula: Dehydrated lamb, ground pearl millet, ground brown rice, chicken fat, whitefish meal, whole ground flaxseed
caninecaviar.com	21% protein; 12% fat; 3.3% fiber; 8% moisture
Chicken Soup for the Pet Lover's Soul Diamond Pet Products Meta, MO	Adult Dog Formula: Chicken, turkey, chicken meal, ocean fish meal, cracked pearled barley, whole grain brown rice
(800) 442-0402 chickensoupforthe petloverssoul.com	24% protein; 14% fat; 3% fiber; 10% moisture
Cloud Star Kibble ^{*3} Cloud Star Corporation San Luis Obispo, CA (800) 361-9079	Holistic Kibble Formula: Chicken meal, ground barley, ground brown rice, de-boned chicken, ground oats, vegetable oil
cloudstar.com	30% protein; 9% fat; 2% fiber; 10% moisture
Drs. Foster & Smith Drs. Foster & Smith Rhinelander, WI	Lamb Formula: Lamb meal, lamb, brown rice, barley, rice, rice bran
(800) 826-7206 drsfostersmith.com	21% protein; 11% fat; 3.5% fiber; 10% moisture
Eagle Pack Holistic Select Eagle Pet Products, Inc. Mishawaka, IN (800) 255-5959	Anchovy, Sardine & Salmon Meal Formula: Anchovy meal, sardine meal, salmon meal, oatmeal, grnd. brown rice, grnd. white rice
eaglepack.com	22% protein; 12% fat; 3.9% fiber; 10% moisture
Evanger's Super Premium* ⁴ Evanger's Dog & Cat Food Co. Wheeling, IL (800) 288-6796	Pheasant & Brown Rice Formula: Pheasant, duck meal, brown rice, salmon meal, pearled barley, oatmeal
evangersdogfood.com	24% protein; 14% fat; 3.5% fiber; 10% moisture
Evolve Triumph Pet Industries Inc. Warwick, NY (800) 331-5144	Maintenance Formula: Lamb, chicken meal, brown rice, ground white rice, chicken fat, rice bran
evolvepet.com	25% protein; 15% fat; 5.5% fiber; 10% moisture
Firstmate Dog Food Taplow Feeds North Vancouver, BC (604) 985-3032	Ultra Premium Naturally Holistic Formula: Chicken, chicken meal, ground brown rice, pearled barley, organic spelt, steamed potatoes
firstmate.com	25% protein; 15% fat; 4% fiber; 10% moisture

by Nature Organics*2

New to our list. Organic products represent another fast-growing segment of the industry; that's good for our dogs. By all reports, though, the demand for organic ingredients outstrips the supply. Interestingly, by Nature and other companies who make food with organic chicken tend to use chicken and chicken meal, with only one ingredient or the other being organic.

Cloud Star*³

This is a baked food.

Evanger's Super Premium*4

New to our list. This is the only pheasant-based dry food we've seen. Evanger's also makes a similarly nice chicken-based dry food.

MAKER, CONTACT INFO	Sample Variety, first 6 ingredients, Min % Protein, Fat; Max % fiber, moisture
Foundations Petcurean Pet Nutrition Abbotsford, BC (866) 864-6112	Chicken & Vegetable Formula: Chicken meal, barley, oatmeal, ground rice, chicken, chicken fat
petcurean.com	26% protein; 16% fat; 3% fiber; 10% moisture
Fromm Four Star Nutritionals Fromm Family Foods Mequon, WI (800) 325-6331 frommfamily.com	 Chicken à la Veg Formula: Chicken, chicken meal, pearled barley, oatmeal, sweet potato, brown rice 24% protein; 15% fat; 3% fiber; 10% moisture
Go! Natural Petcurean Pet Nutrition Abbotsford, BC (866) 864-6112 petcurean.com	 Chicken, Fruit & Vegetable Formula: Chicken meal, chicken, whole brown rice, whole white rice, barley, sunflower oil 24% protein; 14% fat; 3.5% fiber; 10% moisture
Hund-N-Flocken Solid Gold Health Products	Lamb, lamb meal, millet, brown rice, cracked pearled barley, oatmeal
El Cajon, CA (800) 364-4863 solidgoldhealth.com	22% protein; 10% fat; 4% fiber; 10% moisture
Innova Natura Pet Products Santa Clara, CA	Turkey, chicken, chicken meal, ground barley, ground brown rice, potatoes
(800) 532-7261 naturapet.com	24% protein; 14% fat; 3% fiber; 10% moisture
Innova Evo* ⁵ Natura Pet Products Santa Clara, CA (800) 532-7261	Turkey, chicken, turkey meal, chicken meal, potatoes, herring meal
naturapet.com	42% protein; 22% fat; 2.5% fiber; 10% moisture
Karma Organic* ⁶ Natura Pet Products Santa Clara, CA (800) 532-7261	Organic free-range chicken, organic kamut, organic brown rice, organic oats, organic barley, organic rice protein
karmaorganic.com	20% protein; 12% fat; 3% fiber; 10% moisture
Lick Your Chops Healthy Pet Foods, Inc. West Chester, PA	Adult Maintenance Formula: Chicken meal, brown rice, rice, barley, oats, chicken fat
(800) 821-4640 healthypetfoodsinc.com	25% protein; 14% fat; 4.5% fiber; 10% moisture
Life4K9* ⁷ Life4K9 Pet Food Corp. Atlanta, GA (770) 399-3100	Oven-Baked Chicken & Barley Formula: Chicken, ground barley, ground oats, chicken meal, white fish meal, olive oil
life4k9.com	21% protein; 9% fat; 2.5% fiber; 11% moisture
Lifespan Petguard Green Cove Springs, FL (877) 738-4827	Chicken, chicken meal, ground whole brown rice, ground whole yellow corn, oatmeal, poultry fat
petguard.com	24% protein; 15% fat; 4% fiber; 12% moisture

vo*5

This is a grain-free food.

Karma Organic*6

Unlike many foods containing organic ingredients, this product includes organic chicken. Nice!

Life4K9*7

New to our list. This is a baked food. We're not aware of any other dry foods made with healthful olive oil. Life4K9 also makes a similar lambbased food.

MAKER, CONTACT INFO	SAMPLE VARIETY, FIRST 6 INGREDIENTS, MIN % PROTEIN, FAT; MAX % FIBER, MOISTURE
Merrick Pet Care Amarillo, TX (800) 664-7387	Cowboy Cookout Formula: Beef, oatmeal, barley, beef meal, whole brown rice, canola oil
merrickpetcare.com	22% protein; 14% fat; 3.5% fiber; 10% moisture
Mmillennia Solid Gold Health Products El Cajon, CA	Beef, beef meal, cracked pearled barley, brown rice, millet, rice bran
(800) 364-4863 solidgoldhealth.com	22% protein; 12% fat; 4% fiber; 10% moisture
Natural Balance Organic* ⁸ Dick Van Patten's Natural Balance	Organic Formula: Chicken, organic brown rice, chicken meal, organic oats, organic millet, organic barley
Pacoima, CA (800) 829-4493 naturalbalanceinc.com	22% protein; 13% fat; 4.5% fiber; 10% moisture
Natural Balance Ultra Premium	Ultra Premium Formula: Chicken, brown rice, lamb meal, oatmeal, barley, duck meal
Dick Van Patten's Natural Balance Pacoima, CA (800) 829-4493 naturalbalanceinc.com	23% protein; 13% fat; 3% fiber; 10% moisture
Newman's Own Organics Aptos, CA	Chicken, organic barley, organic rice, organic milo, organic oats, organic flaxseed
(800) 865-2866 newmansownorganics.com	21% protein; 12% fat; 4.5% fiber; 10% moisture
NutriSource KLN Enterprises Perham, MN	Adult Formula: Chicken, chicken meal, brown rice, brewers rice, barley, oatmeal
(800) 525-9155 nutrisourcedogfood.com	26% protein; 16% fat; 4% fiber; 10% moisture
Organix Castor & Pollux Pet Works Clackamas, OR (800) 875-7518	Organix Canine Formula: Organic chicken, chicken meal, organic peas, organic barley, organic brown rice, organic oats
castorpolluxpet.com	25% protein; 15% fat; 4.0% fiber; 10% moisture
Petguard Organic* ⁹ Petguard Green Cove Springs, FL (877) 738-4827	Organic Vegetarian Formula: Organic quinoa, organic oatmeal, organic barley, organic brown rice, organic dried eggs, organic sunflower oil
petguard.com	16% protein; 9% fat; 7% fiber; 12% moisture
Performatrin Ultra Peton Distributors Langhorne, PA	Chicken Formula: Chicken, chicken meal, whole brown rice, whole barley, whole rice, oatmeal
(800) 738-8258 performatrinultra.com	22% protein; 12% fat; 4% fiber; 10% moisture
PHD Viand Perfect Health Diet Products Elmsford, NY (800) 743-1502	Canine Growth and Maintenance Viand Formula: Lamb meal, chicken meal, brown rice, whole corn, Naturox [®] (antioxidant), barley
phdproducts.com	26% protein; 16% fat; 3% fiber; 10% moisture

Natural Balance Organic*⁸ New to our list.

Petguard Organic^{*9} New to our list. This is a vegetarian food.

MAKER, CONTACT INFO	SAMPLE VARIETY, FIRST 6 INGREDIENTS, MIN % PROTEIN, FAT; MAX % FIBER, MOISTURE	MAKER,
Pinnacle Breeder's Choice Pet Foods Irwindale, CA (800) 255-4286	Trout and Sweet Potato Formula: Trout, oatmeal, toasted oats, herring meal, oat flour, canola oil	Showbou Healthy P West Che (800) 821-
breeders-choice.com	22% protein; 10% fat; 4% fiber; 10% moisture	healthype
Prairie Nature's Variety Lincoln, NE (888) 519-7387	New Zealand Venison Formula: Venison meal, millet, oatmeal, barley, canola oil, pumpkin seeds	Timberw Yukon Nu Winderwe (407) 877-
naturesvariety.com	26% protein; 14% fat; 3.9% fiber; 10% moisture	timberwo
Premium Edge Premium Edge Pet Foods Meta, MO (800) 977-8797	Chicken, Rice & Vegetables Formula: Chicken, chicken meal, ocean fish meal, whole grain brown rice, cracked pearled barley, white rice	Ultra Hol Nutro Pro City of Inc (800) 833-
premiumedgepetfood.com	26% protein; 15% fat; 3% fiber; 10% moisture	www.ultra
Prime Life Plus Owen & Mandeville Pet Products Oxford, CT	Prime Life Plus Formula: Chicken meal, turkey meal, whole brown rice, ground white rice, whole barley, whole oats	VeRUS VeRUS Pe Abingdon, (888) 828-
(888) 881-7703 ompetproducts.com	25% protein; 16% fat; 5% fiber; 10% moisture	veruspetfo
Raw Instinct* ¹⁰ Nature's Variety Lincoln, NE (888) 519-7387	Chicken meal, tapioca, chicken fat, pumpkin seeds, Menhaden fish meal, alfalfa meal	Wellness Old Moth Lowell, M (800) 225- oldmothe
naturesvariety.com	42% protein; 22% fat; 3.2% fiber; 10% moisture	
Royal Canin Natural Blend*11 Royal Canin USA, Inc. St. Charles, MO	Medium Breed Adult Formula: Chicken meal, brown rice, rice, oatmeal, chicken fat, chicken flavor	Wenaewo Della Natu Bayside, N (866) 936- wenaewe
(800) 592-6687 (US) (800) 527-2673 (Can) royalcanin.us	25% protein; 14% fat; 3.6% fiber; 10% moisture	Wellness
Royal Canin Veterinary Diet* ¹² Royal Canin St. Charles, MO	Potato & Rabbit Formula: Dehydrated potatoes, rabbit meal, rabbit, canola oil, potato protein, potato fiber	Food Sol Old Moth Lovell, MA (800) 225- oldmothe
(800) 592-6687 (US) (800) 527-2673 (Can) royalcanin.us	19% protein; 10% fat; 4.5% fiber; 10% moisture	Wysong Wysong (Midland, 1

Raw Instinct*10

New to our list. This is a grain-free food.

Royal Canin Natural Blend*¹¹

Royal Canin has gone nuts developing foods "specially formulated" for dogs of every specific size, breed, activity level, age, health condition, coat length (we're not making this up!), and even indoor/outdoor residence. We're not buying the notion that the foods are different in meaningful ways. But the ingredients generally pass muster.

Royal Canin Veterinary Diet*^{12} We'll call this "new to our list," but actually, it's been reincarnated on our list. Royal Canin purchased IVD (Innovation Veterinary Diets), and now makes the "prescription" foods (so-called because they are supposed to be available only through a veterinarian's prescription. Of all the prescription foods, we liked IVD's products best, as the company used better quality ingredients and natural preservatives. Happily, Royal Canin is carrying on that tradition.

Showbound Naturals*13

Also reincarnated on our list. This food dropped off the list some time ago due to an editorial error. Our apologies!

MAKER, CONTACT INFO	Sample variety, first 6 ingredients, MIN % protein, fat; max % fiber, moisture
Showbound Naturals* ¹³ Healthy Pet Foods, Inc. West Chester, PA (800) 821-4640	Chicken & Brown Rice Formula: Chicken, chicken meal, brown rice, barley, whole oats, chicken fat
healthypetfoodsinc.com	25% protein; 14% fat; 4% fiber; 10% moisture
Timberwolf Organics* ¹⁴ Yukon Nutritional Co. Winderwere, FL (407) 877-8779	Lamb, Barley & Apples Formula: Lamb, salmon meal, lamb meal, salmon, whole ground oats, whole ground barley
timberwolforganics.com	28% protein; 18% fat; 3% fiber; 9% moisture
Ultra Holistic Nutrition* ¹⁵ Nutro Products, Inc. City of Industry, CA (800) 833-5330	Ultra Adult Dry: Chicken meal, whole brown rice, ground rice, lamb meal, rice bran, sunflower oil
www.ultraholistic.com	26% protein; 12% fat; 4% fiber; 10% moisture
VeRUS VeRUS Pet Foods, Inc. Abingdon, MD (888) 828-3787	VeRUS Advanced OptiCoat Diet: Menhaden fish meal, potato, ground barley, ground oats, dried beet pulp, menhaden fish oil
veruspetfoods.com	22% protein; 11% fat; 5% fiber; 10% moisture
Wellness Old Mother Hubbard Lowell, MA (800) 225-0904	Fish & Sweet Potato Formula: Whitefish, ground barley, rye flour, Menhaden fish meal, ground pearled barley, sweet potatoes
oldmotherhubbard.com	22% protein; 12% fat; 3% fiber; 11% moisture
Wenaewe Della Natura Commodities Bayside, NY (866) 936-2393 wenaewe.com.uy	Organic Uruguayan beef, organic brown rice, organic canola seed, organic flaxseed meal, organic sunflower seeds, organic buckwheat seeds
wendewe.com.uy	20% protein; 12% fat; 5% fiber; 10.5% moisture
Wellness Simple Food Solutions ^{*16} Old Mother Hubbard Lovell, MA	Venison Formula: Ground brown rice, venison, brown rice protein, flaxseed, sunflower oil, natural venison flavor
(800) 225-0904 oldmotherhubbard.com	21% protein; 12% fat; 3% fiber; 11% moisture
Wysong Wysong Corporation Midland, Ml (800) 748-0188	Anergen Formula: Lamb, ground brown rice, ground oat groats, ground flaxseeds, dried yeast, dl-methionine
wysong.net	24% protein; 12% fat; 4.5% fiber; 12% moisture
Zinpro Lincoln Biotech East Bend, NC (800) 253-8128	Skin & Coat Formula: Menhaden fish meal, brown rice, oatmeal, ground barley, herring meal, oat flour
www.lincolnbiotech.com	22% protein; 12% fat; 3% fiber; 10% moisture

Timberwolf Organics*14

A perfectly nice food, but please note that despite the name of the company, there are no organic ingredients in this food.

Ultra Holistic Nutrition*15

This product is not new to our list, it just has a new name. Nutro has several product lines of food; this the one we like best.

Wellness Simple Food Solutions*¹⁶

Wellness also makes another single-protein, single-carb food with duck. Very simple formulas such as these can be helpful for identifying ingredients to which your dog reacts badly (by virtue of eliminating those ingredients from his diet). 🗳

Ready, Set, Go!

Teaching your dog to go potty on cue saves time (and maybe your carpet, too!).

BY PAT MILLER

eaching your dog to eliminate on cue is such a valuable "trick" – once your dog knows how, you will wonder how you ever coped without it. No more standing around shivering at night, waiting for "that magic moment." No more walking around the block endlessly in frustration, when you have to get to work. No more "finding" poop on the bottom of your shoe in a part of the yard where you really didn't expect to find it! And, we hope, no more "accidents" in the house.

It's that easy

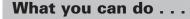
Sound too good to be true? As long as you consistently practice with your dog, it's actually relatively simple to put her elimination on cue, since the behavior is reasonably easy to predict.

You know your dog is going to pee at

certain times of the day, such as when you take her outside first thing in the morning; you just have to be awake enough to remember to give the cue an instant *before* the stream starts. You'll also need treats in your pocket, a reward marker at the ready (such as a clicker in your hand, or a readiness to use a verbal marker, such as the word "Yes!"), and your dog on a leash.

At regular intervals throughout the day, take your dog to her potty spot and wait. When you see the unmistakable signs that she's about to pee, give your potty cue. When she's done, click! (or use your verbal marker) and give her a treat. *Be careful not to use your marker until she's finished!* If you click! in midstream, she may well stop to get the treat, and probably won't finish, since her bladder no longer feels full. Then you'll take her back inside with a half-

omfort



- Implement a consistent and effective housetraining program early in your dog's life – don't wait for new carpeting!
- Teach your dog to eliminate on cue to make potty trips hasslefree and life easier.
- Training is not always the answer. Consider management solutions if you're dealing with extrachallenging bathroom behaviors with your dog.

full bladder and she'll be likely to have an accident prior to her next scheduled potty break. Oops!

After you've marked and rewarded her efforts, spend a few minutes playing with her outside. Some dogs learn that outside fun is over as soon as they're empty, and "hold it" as long as they can to prolong playtime. Potty first, then play, so your dog is willing to eliminate quickly in anticipation of the play reward as well as the treat. If your dog *doesn't* produce any results on her bathroom trip, be sure to supervise her closely – or even crate her – until her next trip outdoors.

Owners often agonize over what word to use as a bathroom cue. It doesn't matter to the dog what cue you use. As long as you consistently associate the word with the action, she'll figure it out. Some suggestions include go pee, (this is what I use, both for urination and defecation), go potty, go shi-shi (apparently a Hawaiian and Japanese slang word for urinating), hurry up, or break time.

You will especially appreciate your dog's ability to eliminate on cue are when you are traveling

You will especially appreciate your dog's ability to eliminate on cue are when you are traveling and he needs to "go" at a time in an unfamiliar place and at a time that is convenient for you – especially if it is freezing or raining.

If you consistently cue your dog to "go" every time you take her out, in time you'll be able to jump-start her potty performance by giving the cue no matter where you are.

Bring it up with management

Whether you're facing the challenge of housetraining a new puppy or retraining an adult dog with inappropriate bathroom behaviors, the approach is the same: manage the behavior to prevent mistakes from happening while you teach appropriate toilet habits.

The differences are that while a puppy may not yet have the physical ability to control his need to eliminate for long periods, at least he probably hasn't learned to soil indoors and will have a very strong instinct to keep his den clean. The unfortunate exceptions are puppies raised in very dirty conditions (like many of the puppies raised in puppy mills and sold through pet stores), and those who have been forced to soil their crates repeatedly through improper confinement.

A healthy adult dog is perfectly capable of controlling his elimination urges, so in some cases an adult dog can be housetrained very quickly, especially if she hasn't spent much time indoors. If, however, she has a longstanding habit of urinating and/or defecating indoors, reliable housetraining can be a frustrating goal to achieve. In these cases we sometimes must settle for managing the behavior in order to prevent house soiling.

We use the "umbilical approach" to housetraining puppies and adult dogs. This means the dog is always either in a crate or pen, on a leash attached to you (or restrained nearby), under the direct supervision of an adult or responsible teen, or outdoors. Establish a daytime routine -go out *with* the dog every one to two hours. If you want him to use a particular bathroom area of the yard, always take him on leash to this same spot when you go out with him. Don't just send him out to "do his business" on his own. You won't know if he did anything or not, and you won't be able to reward him for doing the right thing.

Go with him outside. When he urinates or defecates, click! a clicker (or use a verbal marker, such as the word "Yes!") and feed him a treat. Then play with him for a few minutes before bringing him indoors, as a reward for going. If he doesn't go, bring him back in, put him in his crate, and try again in a half-hour or so. When you know he's "empty," you can give him some relative but still supervised freedom for a half-hour or so.

If he has a mistake indoors, don't punish him after the fact. It's your mistake, not his. He won't even know what he's being punished for. Quietly clean it up using an

The Elimination Zone

It's very helpful to teach your dog to eliminate whenever and wherever you need him to, especially if you live in a city environment, or in apartment or condominium without a yard. And there are times when you are with your dog when you absolutely do not want him to eliminate, so asking him to empty his bowels and bladder before you get there is a useful exercise.

But even those of us with yards or even vast acreage can benefit from teaching our dogs to eliminate on cue – and to dedicate a certain area in the yard for that task. It's nice to know, no matter where you walk on your property, you are not likely to step in a dog-doo landmine when you aren't expecting it! People with extensive landscaping or perfect lawns will also appreciate the benefits, such as the lack of unsightly brown spots in the green grass! Dedicating one part of your

yard for your dog's elimination also makes it a breeze to clean.

It's a good idea to regularly practice both tasks: asking your dog to eliminate in a new location, and having him use a dedicated potty area at home. Take him straight to the desired spot at times when you know he has to go, use your cue, and reward/reinforce the behavior with treats or a few minutes of playing with his favorite toy.



enzyme-based cleaner like Nature's Miracle to be sure you get all the odor, and vow not to give him so much freedom.

If you catch him in the act, calmly interrupt him and take him outside to his bathroom spot. Again, don't punish him. If you do, you'll only teach him that it isn't safe to toilet in front of you, and he'll learn to run to the back bedroom to do it.

Keep a daily log for one week, writing down when (and what) he goes. Once you have this documentation of his routine, you can start reducing the number of times you take him out, based on his elimination schedule. As he becomes more trustworthy, you can start to give him more freedom. If he backslides it's *your* fault, for giving too much freedom too soon. Back up to a more restricted routine, and proceed more slowly.

At night he should be crated, in or near your bedroom. If he wakes up in the middle of the night and cries, he probably has to go out. You must wake up and take him out, click! and reward when he goes, then bring him back and immediately return him to his crate. You don't want to teach him that crying at night earns a play session!

Dogs do not house soil out of malice or spite; they just don't think that way. If your dog urinates or defecates every time you leave him alone in the house, chances are it's related to stress, perhaps separation anxiety, not malice. Punishing him will only make him more stressed, and make the problem worse.

If you're having serious housetraining problems, you may need the services of a trainer or behavior consultant. Most dogs, thank goodness, want to keep their dens clean and will happily learn to use appropriate bathroom spots if given the chance. It's just one of the many things we love about them.

Case in point

Heather is a 12-year-old West Highland White Terrier who came to see me last week because, according to her owners, she had recently started urinating indoors. The Hadleys had just moved to a brand-new house with wall-to-wall carpeting, and Heather was destroying the rugs.

I was concerned. While the break in Heather's housetraining could certainly be due to the stress of the move and any change in routine that might have occurred along with it, whenever there's a behavior change in an a mature adult dog, especially a senior canine, there's always a strong possibility that it could be a medical problem, perhaps a serious one.

It turned out my fears for Heather's health were groundless. As I explored the Westie's history with her two devoted humans, we came to the conclusion that the little dog had never been fully housetrained. Their previous home had hardwood floors and throw rugs that were easily tossed into the washing machine whenever Heather had an occasional accident, so the lapses in training were never of huge concern to the Hadleys.

Looking back even further, it turned out that Heather had come from a puppy mill environment, forced to live in her own urine and feces, and even as a pup was willing to soil her crate and lie in it. And while Tim insisted that Heather could "hold it" for several hours when shut in the bathroom

when they left her alone, Sue confessed to having cleaned up puddles without telling Tim from time to time over the years.

The good news was that Heather was healthy. The bad news was this was not a new behavior we were dealing with – it was a well-established, 12-year-old behavior. New behaviors are almost universally easier to fix than ones the dog has practiced for a long time.

While the prognosis for completely modifying a behavior that was more than a decade old wasn't bright, there were a number of things I could offer the Hadleys that would help preserve their new carpeting. My suggestions included:

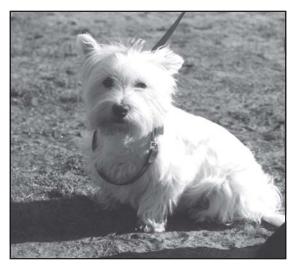
Putting Heather's urination behavior on cue.

■ Starting over with their Westie as if they were housetraining a brand-new puppy: total supervision, with gradually increasing periods of house freedom as Heather came to understand that peeing indoors was no longer acceptable behavior.

■ Teaching Heather to give them a signal when she had to go out.

- Training her to use an indoor litter-box.
- Using doggie diapers.

Heather's owners wanted to teach her to bark to let them know she had to go out. On rare occasion, they said, she would bark when she had to defecate – and she never



The "umbilical cord" style of housetraining requires that you keep your dog on leash or in a crate, so you keep her from eliminating in an inappropriate place, and cue and reward her for "going" at the right time and place.

defecated in the house. But other than that, she *never* barked, even when they tried to elicit barking behavior. I suggested that it would be easier to teach her a different signal – ringing a portable electronic doorbell button that they could also take with them when they traveled.

Heather hadn't received any formal training, and didn't know how to target, so we started teaching her. Since Heather also wasn't inclined to paw at things, we elected to use nose targeting instead of foot targeting (see "New Tricks for a Stick," WDJ January 2007). In less than 10 minutes she was touching her nose to the doorbell button in order to get a click! and treat. She wasn't ringing it yet – that would be one of Tim and Sue's homework assignments in the two weeks following our session together. The ease with which she caught on to the concept of "touch" bodes well for success with her doorbell-ringing task.

When Heather can ring the doorbell easily, the Hadleys will ask her to ring it every time they're ready to take her out to potty. In time, she should start offering to ring it without being asked, to tell them she needs to go out.

The Hadleys also liked the idea of providing an indoor litter box for Heather (see "Fine for Littering," September 2002). We agreed that Heather would probably never be a super hold-it dog – a realistic goal might be three to four hours maximum, not the 8 to 10 hours that some iron-bladder dogs are capable of when necessary. A litter box would give her a "legal" place to go indoors when she had to be left alone for longer than she could hold it.

Sue had tried a litter box once but Heather ate the litter pellets, so she gave up. I suggested some artificial turf as a less palatable alternative, and explained they could train their dog to use it the same way they taught her to use a potty spot outdoors. They could start with the plastic box, lined with the artificial grass and positioned in Heather's outdoor bathroom spot, and coax her to jump in it to eliminate. When the Westie would use it outdoors, they could move it indoors. When the box got soiled, the turf and plastic container would be easy to clean.

Finally, we discussed the possibility of doggie diapers as a last resort to save the new carpeting. Available from most pet supply catalogs and websites, these slip over a female

dog's hindquarters, or a belly band wraps around a male dog's abdomen.

Diapers represent a management measure, although because many dogs don't want to soil themselves, they can also help with training.

My husband and I have used a diaper with our Scottie, who started urine-marking indoors when we moved to a house that, previously, had been occupied by a dog who wasn't well housetrained. After more than a year of scrupulous management, we are now giving Dubhy supervised freedom without the band, and he's doing well.

The Hadleys were pretty sure that Heather would chew off the diapers, but agreed to give them a try if the other measures weren't sufficient to prevent indoor accidents.

I asked my clients to report back to me two weeks after their first session, to see how the program is working. I haven't received Heather's first progress report yet, and I'm eager to hear of the Hadley's success. Both Tim and Sue appeared committed to all aspects of the program and capable of carrying them out. Looking into my crystal ball, I predict a bright, stainfree future for Heather and the Hadley's new carpeting.

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

Canine Candida

Many chronic health problems can be traced to a yeast overgrowth.

BY CJ PUOTINEN

hirty years ago, even though the systemic yeast infection called candidiasis had already become an epidemic, practically no one knew anything about it. Even now conventional medicine tends to ignore the problem, but word has spread among health-conscious consumers.

If you haven't had a candida yeast infection yourself, you know dozens of people who have – and dozens of dogs as well. Candidiasis is an underlying cause of many skin and coat problems, allergies, fungal infections, ear infections, digestive problems, food sensitivities, and other symptoms in our canine companions.

Candida albicans, which causes candidiasis, is a single-celled organism classified as both a yeast and a fungus. It occurs naturally in the digestive and genital tracts, and in healthy bodies it is kept in check by beneficial bacteria. In humans whose beneficial bacteria have been dam-

What you can do . . .

- Avoid feeding your dog grainbased or high-carb pet foods.
- Starve or destroy candida and detoxify the body with diet and supplements.
- Resist giving your dog antibiotics for minor infections or anytime they are not absolutely necessary.
- Re-establish your dog's population of beneficial bacteria with probiotic supplements.
- Persevere. Candida infections are difficult to eliminate.



aged or destroyed, the organism causes or contributes to thrush (a fungus infection of the throat and mouth), diaper rash, athlete's foot, jock itch, vaginal yeast infections, digestive problems, seasonal allergies, ringworm, nail fungus, and environmental sensitivities. It also disrupts the immune system's response to agents of infection.

In dogs and humans, patients at highest risk are those who have taken antibiotics, which destroy the beneficial bacteria that normally keep *Candida albicans* from taking over. But the body's ecology can be disrupted by environmental conditions, diet, stress, chemotherapy drugs, steroids, and other medications as well.

Keeping candida in check

Like all yeasts, candida thrives on sugars, including those from grains, starches, and other carbohydrates. Beneficial bacteria (such as *Lactobacillus acidophilus*) metabolize sugars, which keeps candida in check by disrupting its food supply. A shortage of beneficial bacteria results in a sugar-rich environment and an abundance of *Candida albicans*.

Once a candida overgrowth occurs, it becomes a vicious cycle. Candida cells overwhelm whatever beneficial bacteria survive in the digestive tract or are introduced as supplements, and a diet high in carbohydrates keeps the candida population strong and in control.

In 1983, William G. Crook, MD, published *The Yeast Connection*, the first of many books linking candidiasis, chronic health problems, and a high-carbohydrate diet. Since then, hundreds of anti-candida diets, drugs, herbal products, and nutritional supplements have become weapons in the war against *Candida albicans*.

Canine nutritional consultant Linda Arndt of Albany, Indiana, has studied candida for years, and her checklist of conditions linked to the organism's overgrowth is lengthy (see "Yeast Symptoms Checklist," page 14).



A dog with continually inflamed, goopy ears is probably fighting a chronic yeast infection. She needs more than topical treatment.

Candida is a formidable enemy, she explains, because its cells manufacture toxic chemicals that kill beneficial bacteria and harm the body. Candida's waste products include toxic alcohols, acetone, and the nerve poison hydrogen sulfide, all of which slow the brain, contribute to fatigue, and disrupt the immune system.

Candida symptoms are often misdiagnosed as allergies, says Arndt, manifesting as rashes or skin outbreaks on the feet, face, underarm, underbelly, or genital areas. Recurring hot spots or infections of the ears, eyes, bladder, or urinary tract can be caused by candida overgrowth.

"These conditions can be accompanied by a secondary infection, which is what gets treated," she says, "but the underlying cause is rarely addressed by conventional medicine. In addition to fatigue, lethargy, immobility, joint pain, and discomfort, all of which can be caused by yeast toxins, the infected patient may experience severe itching, which leads to endless biting, chewing, and hair loss. The dog's skin can turn black, become dry and flaky, or develop a greasy grit on the surface, and wherever candida takes over, a bad yeasty smell can develop."

Treatment with antibiotics, steroids, and other conventional drugs may bring temporary relief, but the patient soon returns with another flare-up, and symptoms progress until the veterinarian suggests allergy testing.

"The results tell you the dog is allergic to everything from dust mites to tuna and lima beans," says Arndt. "But that's not where the problem lies. Many so-called allergy cases are nothing more than misdiagnosed systemic yeast infections from candida overgrowth."

According to holistic physician Bruce Fife, ND, the candida organism is especially insidious because it changes form. "If left unchallenged," he says, "candida converts from a single-celled form into a multi-celled or mycellial fungal form with hairy, root-like projections called rhizoids. These rhizoids penetrate the intestinal wall, which affects the intestines' ability to absorb vitamins, minerals, amino acids, and fatty acids, leading to nutritional deficiencies and leaky gut syndrome."

Leaky gut syndrome allows bacteria, toxins, and undigested food to pass through the intestinal wall into the bloodstream, where they cause chronic low-grade infections, inflammation, and allergic responses. "The immune system identifies undigested food proteins as foreign invaders," says Dr. Fife, "and its attack results in allergy symptoms. Your dog's food allergies, seasonal allergies, and environmental allergies can all be caused by an imbalance in the microbial environment of his digestive tract. It's no exaggeration to say that chronic health problems originate in the intestines."

Even without an overgrowth of *Candida albicans*, a disruption of the body's supply of beneficial bacteria poses problems. As described in "Probing Probiotics" (WDJ August 2006), beneficial bacteria form a first line of defense against pathogens; help prevent antibiotic-associated diarrhea, traveler's diarrhea, and leaky gut syndrome; improve lactose tolerance; produce vitamins and enzymes; decrease toxins and mutagenic reactions; improve carbohydrate and protein usage; strengthen innate immunity; create a protective barrier effect in the intestinal tract; and help reduce food sensitivities and skin disorders.

It's definitely worth helping your dog become a poor host for *Candida albicans* and, instead, become a nurturing host for beneficial bacteria.

Natural remedies for candidiasis

In conventional medicine, antifungal medications clear up chronic yeast infections, fungal infections, and related symptoms. But many antifungal drugs have potentially serious side effects and they produce only temporary results. As soon as the prescription ends, surviving candida cells multiply, recolonize, and trigger a return of symptoms.

Alternative therapies, such as medicinal herbs and diet, have fewer side effects and help correct the problem's underlying causes. It's important, says Arndt, to work with a holistic veterinarian and avoid vaccinations, steroid drugs, and other conventional treatments that can disrupt the immune system. Because many (if not most) cases of canine candidiasis coincide with hypothyroidism, the patient's thyroid levels should be checked.

"Probiotics are popular treatments for candida infections, but proper timing is important," she says. "Feeding large amounts of acidophilus and other probiotics doesn't help a dog whose system is overwhelmed by candida. In fact, this kind of supplementation can make things worse. The first step in effectively treating candida is reducing its population. Two weeks after that, beneficial bacteria can be effectively added to the system."

For human patients, menu plans such as the Atkins diet, which is high in protein and fat and very low in carbohydrates, are recommended because they starve yeast cells without harming beneficial bacteria.

Wild wolves are unlikely to suffer from candida overgrowths because, as Dr David Mech explained in "What Wolves Eat" (WDJ, March 2005) wolves in the wild consume little or no sugars, grains, starches, fruits, or other carbohydrates and very little vegetable matter. Their diet consists almost entirely of the meat, organs, blood, skin, and bones of prey animals.

Switching a candida-infected dog from grain-based kibble to a grain-free, starchfree, low-carbohydrate diet is an easy way to reduce a dog's population of *Candida albicans*.

Coconut oil

One effective anti-candida ingredient that can be added to a dog's food, whether commercial or home-prepared, is coconut oil (see "Crazy About Coconut Oil," October 2005). According to Dr. Fife, author of *Coconut Cures* and a leading expert on coconut's health benefits, the fatty acids in coconut oil kill candida and other damaging organisms without harming friendly bacteria. "Coconut oil's fatty acids are absorbed into the cells, which use them as fuel to power the metabolism," he says. "When applied topically on the skin, coconut oil promotes the healing of damaged tissue. In the same way, it speeds the healing of perforations in the intestinal wall. Coconut oil can help any dog reestablish and maintain a healthy intestinal environment."

Caprylic acid, a nutritional supplement derived from coconut oil, kills candida cells. "Caprylic acid is sold specifically for this condition," says Dr. Fife, "but it's less expensive and just as effective to use the coconut oil it's derived from. That way you ingest not only caprylic acid but lauric acid, which has also been shown to kill candida cells, along with other essential fatty acids that improve intestinal health."

The recommended dose is at least 1 teaspoon coconut oil per 10 pounds of body weight, or 1 tablespoon per 30 pounds. Dogs with candidiasis may need more, especially in the early stages of treatment. For best results, feed in divided doses, provide extra fluids and drinking water to help flush toxins from the body, and start with small amounts and build up gradually so the body has time to adjust. The side effects of too much coconut oil too soon can include greasy stools or diarrhea, physical fatigue, mental exhaustion, and body aches.

Dealing with die-off

Flu-like symptoms such as exhaustion, body aches, diarrhea, and nausea are caused by die-off, also known as the Herxheimer reaction. When large numbers of viruses, bacteria, parasites, yeasts, or fungi die, their physical remains and the toxins they produce overwhelm the body, and it takes days, weeks, and in some cases, months for the organs of elimination to catch up, during which symptoms such as itching or skin breakouts may increase.

Systemic enzyme supplements such as Wobenzym (discussed in "Accelerated Wound Healing," August 2006) are especially helpful during detoxification. Taken between meals, systemic enzymes circulate in the blood, breaking down inflammation and digesting dead candida cells. Wobenzym contains pancreatin, bromelain, and other digestive enzymes in entericcoated tablets that survive stomach acid and break apart in the small intestine.

Other enzyme products like Prozyme, which contains amylase, lipase, cellulase, and protease, are taken with meals to improve the assimilation of nutrients and to compensate for the lack of live enzymes in processed food. Double the recommended dose for dogs age eight or older or for dogs switching from a high-carbohydrate food.

Seacure ("Securing Seacure," April 2003) supports anti-candida programs by providing amino acids that are essential to the liver during the second phase of detoxification. Double the recommended dose of Seacure pet powder or chewable pet tabs for the first two weeks of treatment, then follow label directions.

Herbs and supplements

Several medicinal plants are used in candida therapy. They are recommended for use by themselves, in combination, or sequentially (one after another), so that highly adaptable candida cells don't have time to mutate. Any anti-candida supplement designed for humans can be adjusted for canine use according to the dog's weight. Divide the human label dose by 2 for dogs weighing 50-70 pounds; divide label dose by 4 for dogs weighing 25-35 pounds.

The following and similar supplements are an essential first step in a candida control program.

Black walnut hulls (Juglans nigra), especially those harvested in early fall when the hulls are still green, repel parasites, improve skin conditions, and fight fungal and bacterial infections. Look for "green" black walnut hull extracts and tinctures.

Garlic (Allium sativum) strengthens immunity by aiding white blood cells, and it has shown significant antifungal activity against Candida albicans in animal and test tube studies. But in large amounts, garlic may cause hemolytic or Heinz factor anemia in dogs. Daily doses of up to 1 small garlic clove per 20 pounds of body weight are considered safe, as are garlic extracts given according to label directions adjusted for the dog's size. For best results, alternate garlic with other antifungal herbs. Although onions are a highly regarded prebiotic (a food that feeds beneficial bacteria), onions are not recommended for dogs in *any* quantity because of their high hemolytic anemia risk.

Horopito (Pseudowintera colorata), also known as the New Zealand pepper tree, is a traditional Maori treatment for fungal infections. In 1982, New Zealand researchers tested horopito extracts against Candida albicans with excellent results. The New Zealand product Kolorex is now an international best seller. Yeast and mold expert Ingrid Naiman shares Kolorex with her dog.

Olive leaf (Olea europaea) is a popular supplement for candidiasis. Its active ingredient, oleuropein, has antiviral, antifungal, antibacterial, and antioxidant effects in addition to lowering blood sugar and improving blood circulation.

Pau d'arco (Tabebuia impetiginosa,

Yeast Symptoms Checklist

Diagnose your dog's candida yeast infection with the help of the following checklist of yeast symptoms, developed by Neil

Weiner, DVM, of Shasta, California. Check each symptom your pet is experiencing, then add up the number of checks.

GENERAL HEALTH

- fatigue
- poor appetite
- overweight
- nervous
- anxiousness, anxiety
- allergies
- environmental sensitivities
- to pollens, weeds, and grass
- frequent infections
- dull, rough hair coat

SKIN

- rashes and itching
- hives
- draining sore
- itchy feet
- chewing feet or tail area
- body odor
- face rubbing
- acne
- eczema
- oily, greasy skin
- dry, flaky skin
- excessive shedding
- discolored (blackened) skin
- thickened, rough skin

RESPIRATORY SYSTEM

- wheezing
- coughing
- asthma
- nasal discharge
- reverse sneezing (snorting)
- itching nose

DIGESTIVE SYSTEM

- bad breath
- smelly bowel movements
- indigestion
- frequent episodes of vomiting and/ or diarrhea
- constipation
- anal gland/anal sac irritation

EARS

- increased discharge
- _____ ear infections
- ear itching or pain

EYES

- itching eyes
- red, irritated eyes
- cloudy eyes
- excessive tearing, oozing
- dull appearance to eyes

MUSCULOSKELETAL SYSTEM joint pain

- stiff neck

URINARY/GENITAL SYSTEM

- bladder infection
- bladder/kidney stones
- increased urination
- ____ irregular heat cycles
- vaginal discharge/infections

SCORE RESULTS:

0 =excellent health

1 to 2 = mild dietary change and nutraceutical/herbal support needed

3 to 5 = moderate dietary change and nutraceutical/herbal support needed

5 or more = marked dietary change, nutraceutical and herbal support, and time needed for your dog to cleanse, detoxify, and rebuild his or her immune system, replenishing missing food nutrients unavailable from previous diet.

- arthritis backaches

also known as lapacho or taheebo) is an Amazon rainforest tree with astringent, anti-inflammatory, antibacterial, and antifungal properties. Pau d'arco teas and extracts help treat systemic, chronic, or recurrent candidiasis, leaky gut syndrome, and related disorders.

Quebracho (Aspidosperma quebrachoblaco) is a tannin-rich South American tree. Its bark is used in the leading anti-candida product, Tanalbit. Its manufacturer claims quebracho does not contribute to Herxheimer (die-off) reactions. Some veterinarians have used Tanalbit for canine candidiasis for years with excellent results.

As explained in WDJ's aromatherapy series ("Smell This, You'll Feel Better," December 2004; "Essential Information," January 2005; and "Canines in a Mist," April 2005), therapeutic-quality essential oils and hydrosols can be diluted for safe, effective canine use.

The essential oil of wild oregano (*Orig-anum vulgare*) has become a popular treatment for candidiasis at human doses of 1 drop once or twice per day, building up to a dose of 1 drop 4 times per day, which is considered safe for long-term use.

Dogs dislike the taste and smell of oregano oil. For canine treatment, dilute full-strength oregano oil with olive oil, then place a drop of the diluted oil in an empty 2-part gelatin capsule, which can be hidden in food. For dogs weighing 50-70 pounds, dilute ¹/₂ teaspoon oregano essential oil with ¹/₂ teaspoon olive oil; for dogs weighing 25-35 pounds, use 1 teaspoon olive oil; and for smaller dogs, use 1¹/₂ to 2 teaspoons olive oil. Start with 1 drop of the diluted oil per day and gradually build up to 1 drop 4 times per day.

Tea tree hydrosol, the water produced during steam distillation of tea tree essential oil, is a safe, effective topical treatment for ear infections, hot spots, skin breakouts, and other candida symptoms.

With antifungal, antibacterial, antiyeast, and antiviral properties, coconut oil is an excellent carrier in which to dilute essential oils. It can also be applied by itself to ringworm and other fungal breakouts. Store in a small dropper bottle for convenient application. In cold weather, melt the coconut oil by placing the bottle in hot water.

Probiotics

After two weeks of improved diet and treatment with antifungal herbs and supplements, your dog's system should be ready to support beneficial bacteria.

Resources Mentioned in This Article

The Aromatherapist USA. Essential oils and hydrosols. (702) 413-9817, thearomatherapistusa.com

Coconut Cures, by Bruce Fife, ND. Piccadilly Books, 2005. piccadillybooks.com

Fungus Focus: The Ultimate Resource for Fungal and Yeast Infections, downloadable e-book. Fungus Focus, 2006. fungusfocus.com

Kolorex. Forest Herbs Research, New Zealand, kolorex.com

Mold Misery. Ingrid Naiman, moldmisery.com

Nature's Gift. Essential oils and hydrosols. naturesgift.com

Nzymes Yeast Kit and candida-support for pets. Biopet Inc. See website for complete instructions and details. nzymes.com, (877) 816-6500

Prozyme. Free sample. Prozyme Products, prozymeproducts.com, (800) 522- 5537, X-201

Seacure. Proper Nutrition, (800) 555-8868, propernutrition.com

"Systemic Yeast Infections in Dogs," resources and related information. Linda Arndt, greatdanelady.com

Tanalbit. Intensive Nutrition, Inc. (800) 333-7414, tanalbit.com

Wobenzym. Naturally Vitamins, naturallyvitamins.com, and the Wobenzym Place, (800) 588-8139, buywobenzym.com

A few native bacteria survive even lengthy antibiotic treatment, so the odds are that your dog has a small population of

beneficial bacteria that could recolonize her system if properly fed with "prebiotics."

The best prebiotics for the dog's beneficial bacteria are lactofermented vegetables (see "It's All in How You Make It," March 2001) and supplements

such as inulin, whey, and fructooligosaccharides (FOS). Start with small amounts and gradually increase, adjusting label directions for your dog's weight. Reduce the dose if flatulence or digestive discomfort develops. Do not feed whey to dogs with an intolerance to foods containing lactose.

Acidophilus is a familiar probiotic, but there are dozens to choose from. Look for live-culture products in health food or pet supply stores, and give frequent doses to help flood the system with beneficial bacteria. Help the bacteria reproduce by combining them with prebiotics, a lowcarbohydrate diet, and enzymes.

Anti-candida kits

To help dogs overcome candiasis, Linda Arndt worked with BioPet, Inc., to design a kit containing cleansing and detoxifying products. The goal was to provide a complete kit, with clear instructions that take the mystery out of candida and detoxifica-



tion. The Nzymes Yeast Kit is available in a small size for pets up to 60 pounds in weight and a large size for pets over 60 pounds. The kit con-

tains antifungal treats or granules, oxidizing drops that can be taken internally or applied topically, digestive enzymes, probiotics, and a combination of black walnut and olive leaf extracts for internal and topical use.

"We designed the kit for convenience, because it's hard to know what to do or where to get products that work," she says. "Candida infections are difficult to treat. They take time to develop, and it takes time – as long as a year or more – to get them to go away. But by improving the diet, removing candida, detoxifying the body, and flooding the system with beneficial bacteria, anyone can help candida-infected dogs get and stay well."

WDJ contributor CJ Puotinen lives with her husband, Joel, and Labrador Retriever, Chloe, in New York.

HERBAL MEDICINE

Count On Calendula

This safe and common herb is famed for its ability to soothe and heal.

BY GREGORY TILFORD

he world of herbal medicine offers hundreds of choices to consider. Some are rather obscure; almost inaccessible to anyone but those who are connected to an exclusive, exotic source. Yet others are within such easy reach that they are often overlooked, considered mundane and useless simply by their abundance. After all, who would think first of the dandelions growing along the back fence when looking for an herbal approach to a rare and inoperable cancer?

Any self-respecting herbalist will admit that herbal panaceas do not exist. No single herb can cure all of your dog's ills. None serve as silver bullets against disease. But there are some that are so generally useful that it is no wonder why they were once touted as "cure all" medicines.

Take *Calendula officinalis*, the common pot marigold that adorns herb and flower gardens in virtually every corner of

What you can do . . .

- Grow your own, or buy dried calendula flowers from a health food store that carries herbs. Or use a reputable mail-order herb store, such as Frontier Natural Products (frontierherb.com) or Jean's Greens (jeansgreens.com).
- Make an infusion of calendula flowers and use it liberally to rinse your dog's skin and coat to soothe and help heal any type of skin irritation or infection.
- Use a calendula tincture as part of a multifaceted program to treat your dog's chronic yeast (candida) infection.



Calendula is highly effective when used in a cool water rinse for any sort of skin irritation. Dogs with pink, sensitive skin will especially appreciate calendula's ability to quickly soothe flea bites, sunburn, or vexing "hot spots."

the globe. Although many of its fans know of the skin healing attributes of calendula salves, lotions, and shampoos, its range reaches far deeper than the skin.

For many centuries calendula has been used to treat everything from skin lesions to tuberculosis – even syphilis. But its real claim to fame and effectiveness comes from its well documented ability to speed the healing of skin and most other body tissues, inside and out.

First in first aid

Calendula is among the first herbs to consider in minor first aid situations. A broad array of medicinal compounds in the flowers of the plant, including various essential oils, flavonoids, saponins, triterpene alcohols, and carotenes, combine to help speed cell reproduction and inhibit bacteria and fungi at the site of injury.

For minor cuts, insect bites, abrasions, or postsurgical incisions, a calendula salve (an oil-based product) will bring quick, soothing relief to pain and swelling, while lending antimicrobial properties to the body's healing effort.

Infusions of calendula flowers are effective as a soothing and healing skin wash for various forms of inflammatory dermatitis, such as flea bites, poison ivy, eczema, or sunburn. The antimicrobial and astringent nature of this plant make it useful for treating burns as well.

In these circumstances, a cooled water infusion (skin rinse) is recommended over oils, salves, or poultices, as the latter may seal in heat, causing further aggravation of the injury.

A cooled water infusion may also be used as an eyewash for conjunctivitis, where the mild but predictable astringency of the plant combines with its bacteriafighting properties to reduce irritation and infection.

Internal uses of calendula

Internally, an infusion or tincture of the

Make a Calendula Rinse

Making a soothing, healing, antimicrobial calendula skin rinse is easy. Simply bring one quart of fresh water to a boil in a glass or stainless steel cooking vessel. Add ½ cup of the fresh dried flowers (available in bulk at many health food stores) to the vessel, remove from heat and cover. Allow to steep until cool. Strain through a sieve and you have a nice, yellow infusion that can be applied liberally to skin irritations.

The tea can also be applied to inflamed gums or added (1 cup of tea, as prepared above, to each quart drinking water) to your dog's drinking water for symptomatic relief of sore throat or bacterial infections in the upper gastrointestinal tract.



flower may be used to treat inflammation or ulceration of the digestive or urinary tracts, where it assists with the drainage of lymph-engorged tissues and reduces inflammation. For these reasons, calendula preparations have been shown to be effective in the treatment of chronic colitis.

Calendula tincture may also prove beneficial in the treatment of candidiasis (see article, previous pages).

The antifungal qualities of this herb also make it a possible option for topical treatment of chromomycosis, an infection of the skin that occurs from various fungi origins.

While virtually no scientific data exist to validate the effectiveness of calendula against these forms of disease, its safety and reputed effectiveness as a broadspectrum antifungal agent still make it an option worth considering.

The only contraindication for internal calendula use would be with pregnant females. While I have never heard of a case in dogs, rodent studies have revealed calendula's ability to cause abortion, so it should not be used on pregnant dogs.

Case study

Mitsy, a four-year-old standard Poodle, has had big problems with fleas, but thanks to her owner's meticulous efforts, Mitsy's living environment is now less conducive to flea infestation. Improvements in food quality and a daily regiment of omega-3 fatty acids and herbal detox supplements have helped a lot, too. Within a few weeks only a few surviving fleas remained in the house or on Mitsy's body.

But Mitsy still had a nasty sore on her back, near the base of her tail, and it just wouldn't heal. Mitsy chewed at it practically every hour she was awake, and while the sore never looked infected, it didn't have time to dry up and heal.

Fortunately, Mitsy's owner, Janice, learned about the wound-healing powers of calendula extract. Every evening as Mitsy settled into her bed, Janice applied several drops of calendula tincture directly to the site of wound. To keep Mitsy from licking the calendula off, Janice would sit and pet her companion for a short while, until Mitsy's mind was once again on the subject of resting, not licking.

The calendula inhibited bacterial growth and accelerated cell reproduction at the site of the wound each night while Mitsy was sleeping. Within a few days the sore was almost completely healed, and the itching had subsided enough to where Mitsy's attention was back on chasing toys and playing with Janice.

Easy and inexpensive

Calendula is easy to grow yourself, and thrives in just about any soil. If you continually remove the flowers (to dry and use), the plants will continue to produce blooms for months and months.

You can readily find calendula in a variety of products in your local health food store. There are also many good products on the market that are designed specifically for use in dogs and other animals.

If your natural pet first aid kit doesn't contain calendula salve, calendula tincture, and a small baggie of the dried flowers, then get some!

Greg Tilford is a well-known expert on herbal medicine for animals. He is also the president and formulating herbalist for Animal Essentials, Inc. See "Resources," page 24, for more information.

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Hair of the Dog

Your dog's coat reflects his general health, so help maintain it!

BY RANDY KIDD, DVM, PHD

he primary function of the dog's hair is as a protective and insulating coating.

But if the eyes are the gateway or the window to the soul, the skin and hair are both gateway and window to the embodiment of an animal's inner health and well-being. Shiny hair, that is, a hair coat that exudes a healthy and lustrous sheen, is an indicator of overall health of the animal. In contrast, a dull coat that lacks luster is an indicator that the animal isn't as healthy as she could be.

One of the reasons people like to have pets around is that they are "furry," and furry is fun to touch. Having a healthy coat promotes increased contact between a dog





and its owner, with frequent contact ultimately strengthening the human-animal bond. Some caretakers are very sensitive to the feel and beauty of their dogs and to the "social status" that comes from owning a dog with a beautiful and/or unusual

haircoat. Changes in the texture or appearance of a dog's coat are an indicator of something going amiss within, but haircoat changes are not specific for any one disease or condition. Dull or brittle hair can be caused by a dietary imbalance, or it may be due to diseases of digestive, hepatic, renal, thyroidal, immune, or parasitic origin. Alterations of hair typically appear rather late in the course of the disease, as





Dog coats come in every texture, thickness, length, and color imaginable. But it's all hair; there is no such thing as dogs with "fur" and dogs with hair.

What you can do . . .

- Stimulate your dog's sebaceous glands with regular massage and/ or grooming with a rubber mitt. This releases the dog's natural hair and skin conditioners.
- Keep your dog's coat clean and brushed (or, in the case of long coats, combed). Frequent grooming allows you to monitor his health and maintains your bond.
- "Feed" your dog's coat with a top-quality diet preferably a complete and balanced diet that contains fresh meat.



hair growth is rather slow; it usually takes at least four weeks of disease progress before changes are noticeable in the hair. And it typically takes four or more weeks before a dietary supplement will have any positive effects on the quality of the hair.

The shine attributed to a healthy dog's coat is largely due to a complex group of fats secreted through glands in the skin known as sebaceous glands, which function as a natural dispenser of hair conditioners.

Skin and hair basics

A dog's skin and haircoat form a barrier to protect the body of the dog from infections, parasites, and the elements.

Animal hairs are classified into three basic types: a) "primary" or "guard" hairs that form the outer coat of an animal and provide protection from sunlight, moisture; b) "secondary" hairs (also known as fur or wool hairs, or the undercoat) that form the inner coat of an animal and provide insulation; and c) tactile hairs (whiskers) that provide sensory functions. Other types of hairs found on animals include tail and mane hair (in the horse, for example) and sensory hairs located in the inner ear (hairs that detect motion).

All adult dogs have longer primary hairs and shorter secondary hairs, but the ratio of each type of hair differs by age and especially breed. Some breeds have almost no undercoat and relatively short and thin primary hair. These "single coated" dogs include Boxers, Dalmatians, and Greyhounds. Yorkshire Terriers, too, don't have much of an undercoat, but their primary coat is long and silky.

So-called "double-coated" breeds have significant undercoats *and* dense primary coats. The Labrador has a short but very dense coat of coarse primary hairs, and a thick undercoat of softer, insulating secondary hairs. The Bearded Collie has a soft, close undercoat and a shaggy outer coat.

Puppies are born with short, soft secondary hairs only. Sometimes the puppy's coat color is similar to the adult's; in other instances, the coat darkens or spots as the puppy matures. Dalmatian puppies are born with a pure white coat that develops black spots as the puppy grows.

Dogs of different breeds (and individuals within those breeds) display different rates of coat development. Most dogs have full, adult coats by six to eight months of age. The dog's environment (length of day, average temperature), diet, and hormone levels can influence his coat development.

Dog hair is made of a hard substance called keratin, an insoluble protein that contains high amounts of sulfur (as the amino acid cystine) and lesser amounts of the amino acids tyrosine and leucine. Hair emerges from follicles, just below the outermost layer of skin. In humans, each hair grows from a single follicle. Dogs have single *and* compound hair follicles; a central follicle that produces the primary hair or guard hair may have two or more lateral follicles that produce 5 to 25 secondary hairs each.

Dog hair varies considerably in its coarseness or thickness – actually a function of the hair's diameter. Fine dog hairs measure about 75 microns; coarser hair may exceed 200 microns.

Healthy hair relies on the balance of the diet: proteins (and especially the sulfur-rich amino acids such as cystine, as well as ty-

Dog Shampoos and pH

One frequently repeated claim is that dogs should be bathed with dog shampoo only, because shampoo made for humans will dry out a dog's hair or skin. Sometimes the claim is bolstered by the "fact" that this is because of the difference in pH between dog hair and human hair.

These oversimplistic and not quite accurate claims make our hair stand up!

Not all shampoos made for humans are formulated with the same pH. Some may be quite acidic, as low as 2.0 pH, and some are as alkaline as 9.0. Most are around 5.5 to 6.0 pH. Dog shampoos also vary in pH, although usually dog shampoos are slightly more alkaline, ranging from about 4.5 to 9.0 pH. .

Also, not all dogs (and not all people) have the same pH. Human skin is *usually* slightly acidic, about 5.5 pH, and human hair is usually just a tad more acidic than that, about 4.5 to 5.0 pH. Dogs' skin *tends* to be neutral (about 7.0 pH) to slightly alkaline (8.0 pH).

But these are averages; as always, variations are seen among individuals. A 2002 study found variations in the pH of dog's skin by their breed – from 7.37 for Labradors to 8.07 for Manchester Terriers. The authors of that study cited other factors that have been seen to affect the pH of a dog's skin, including the dog's sex, gonadal



Too-frequent bathing *can* strip the natural oils from your dog's coat – but who washes their dog twice a week? Some dogs produce more sebum and are smellier than others, and benefit from a bath every other week. If dry skin is a problem, avoid shampoos that contain soap.

status, coat color, level of excitement, location of the skin's measurement, and even the time of year.

The phrase "pH balanced" is often used to sell shampoo and conditioner. As nice as this sounds, the phrase is often used to mean different things. Sometimes the manufacturer means that the product is formulated to approximate the average pH of the hair and skin of the intended consumers (human or canine). But sometimes it's used to mean that the product has a neutral pH (7.0), like water.

Seen under a powerful microscope, the outer surface of hair resembles a terra cotta roof, with overlapping rows of flattened cells. If you pull a strand between your fingers, you can feel that it's smoother one way than the other. Acidic substances (with a lower pH) tend to harden and tighten the "tiles" of the hair cuticle. This creates smoother and shinier hair. That's why a diluted vinegar or lemon juice rinse makes your hair shiny. More alkaline substances make the "tiles" swell up, making the surface of the hair rougher and dull-looking.

But the propensity of a shampoo or conditioner to "dry out" a dog's skin or hair involves more than just pH. Shampoos made with soap tend to dry a dog's skin and leave a residue that can cause itching and dandruff. Soap solutions are also quite alkaline. Shampoos made with detergents, in contrast, rinse off dogs (and people) more thoroughly, and tend to be more acidic. Some products also contain humectants (which attract and hold moisture in the hair shaft) and/or conditioning agents (which control static electricity and make the hair easier to comb). Any of these can affect your dog's hair and skin in a way that you find pleasing or annoying; it depends on what type of coat and skin your dog has.

As a rule of thumb, we suggest using products made with simple formulas of easily recognizable, pure ingredients. And if your dog seems greasier or itchier soon after using a particular type of shampoo or conditioner, take note, and don't use that type again! rosine and methionine), essential fatty acids, copper, and B vitamins. Up to 30 percent of the daily protein requirement of an adult dog can be used for the renewal of the skin and the hair.

Hormonal factors can also interfere with proper hair growth: thyroid and growth hormone stimulate the activity of the hair follicles, whereas corticoids and sexual hormones slow it down. When prolactin (a hormone produced by lactating females) levels stay high in the blood, the coat looks like the summer one, rather thin and sparse.

Everybody sheds

Breeds and individuals within every breed shed and regrow hair at varying rates. Dogs who live indoors, with little exposure to natural light or cold temperatures, tend to shed in a more or less continuous fashion.

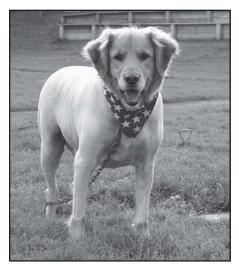
In contrast, dogs who live outside, exposed to natural light and cold temperatures, are more likely to shed for several weeks in the spring and fall. In the fall, their short, light coats shed as they grow a thick, warm undercoat and long, weather-resistant guard hairs to prepare them for winter. In the spring, the winter coat is shed to make way for new, shorter, and lighter coats. The hair coat changes in appearance and texture but the absolute numbers of hair follicles and hair do not.

Contrary to popular belief, there is no such thing as a dog who does not shed; there are only dogs who shed a lot *less*. Each hair shaft produced by a hair follicle will eventually die and become dislodged from the skin (shed) and be replaced by a new hair shaft produced by that hair follicle. However, there are some breeds whose hair grows for a much longer period before it dies and is shed.

There are several phases in the activity of a hair follicle. In the first, called the "anagen" or growing phase, the hair is produced by the follicle.

The "catagen" phase is a short interlude between the growth and the resting ("telogen") phase. In the telogen phase, the hair follicle is basically dormant. The growth of the new hair pushes the old hair out of the skin. Even though spring and fall bring on prolific hair growth, the dog's hair follicles are not all in the same phase at the same time, so thankfully he never becomes totally bald!

In humans, the hair follicles on our heads spend most of the time growing (anagen phase). This phase can last years,



Shaving a dog with an especially thick coat may help him keep cool in hot weather, but don't shave him down to the skin, like this Golden Retriever. He should have at least an inch of hair for protection from sunburn.

depending on the ultimate length of your hair (as determined by your genes). In contrast, the resting phase for each follicle is generally only weeks. Poodles have a predominantly anagen cycle like ours; their hair grows for so long, that it needs cutting (perhaps several times) before it falls out.

Most dogs, though, have a telogen-(resting) predominant cycle. In these dogs the anagen phase is short, only long enough to achieve the genetically desired length of coat – anywhere from one month to a year or more. The hair then cycles into the telogen phase and remains there for a prolonged period of time. This hair is tightly bound within the follicle and will not readily fall out or be pulled out. In the Nordic breeds, it is thought that the telogen phase may last for years.

Finally, any stress – such as anesthesia, disease, pregnancy, or administration of certain drugs – is likely to put most of the follicles into a resting phase. About two to three months after the stressful event, when the follicles start to be active again, abnormal shedding will often be observed.

Natural color

A dog's coat color is determined by his genes. That said, a variety of environmental factors can somewhat alter the color of his hair.

Specific nutrients may be involved in hair color. Cystine, methionine, arginine, tyrosine, and phenylalanine deficiencies are reported to induce hair discoloration. Protein malnutrition induces disturbances in hair growth and quality. A 2004 study by the American Society for Nutritional Sciences reported that traceelement deficiencies or imbalances also affect hair quality. Suboptimal zinc levels, it said, induce graying of hair, and copper deficiency causes fading of brown- or black-pigmented hair. Other trace elements such as iron and iodine can also affect hair color, as well as vitamins A, B-2, and B-6, pantothenic, folic, and nicotinic acids, and biotin.

Too much exposure to sunlight can make the hair brittle and cause a black coat to redden or turn brown. After a dog has been clipped, the color of its hair is noticeably lighter, and scars often leave a mark of hair that remains white throughout the rest of the dog's life.

In aged dogs, hair color tends to fade. As a dog ages, his hair turns gray, especially on the head, beginning with the muzzle.

Hair loss in dogs

The common causes of hair loss in dogs, along with the basics of the appropriate natural remedies, are summarized below. Most are primarily problems of the skin and were more thoroughly covered in "Skin Secrets," WDJ November 2005.

■ Flea-associated dermatitis

A dog with flea infestation typically has a brittle, broken hair coat, especially in the area just in front of the tail head where fleas prefer to reside.

Natural flea control *always* involves a multi-pronged approach. It's been estimated that less than 10 percent of a given population of fleas are found on the resident dog at any given time. Killing the fleas on the dog, then, is actually a small part of the job!

The bigger task involves removing larvae and pupae from your dog's home and eliminating places where the flea eggs can develop. Accomplishing this requires what's called an "integrated pest management" program. In my experience, herbal anti-flea remedies are not tremendously effective as a first line of defense. For more on fleas, see "Eliminate Fleas Without Poisons," March 2002.

■ Canine atopy

This is an allergic itching syndrome along with subsequent loss of hair that is thought to be genetic in origin. Natural care will involve enhancing the immune system with herbs, supplements, and perhaps acupuncture. Natural anti-itch and antianxiety herbal remedies, acupuncture, or homeopathic therapy may also be helpful.

Pyotraumatic dermatitis (hot spots)

Hot spots involve intense itching in one or two isolated area of the trunk or limbs of the body. The involved areas may become inflamed and raw within a matter of hours. Stress may be a factor in its onset.

Natural remedies for hot spots, in my experience, have worked far better than the conventional medical treatments. I like to brew up a tea of calendula and use it topically on the affected areas. Herbal immune system enhancers such as echinacea are an important part of my recommended protocol, and in severe cases acupuncture or homeopathic remedies may be helpful.

I've also found that many of the hot spots are brought on by a segmental nervecaused itch, the result of a misaligned spine or limb joint; chiropractic adjustments seem to be most helpful for these.

■ Mange

Demodectic mange is caused when a parasite, *Demodex canis*, which lives a natural life in the hair and oil glands of the skin of most healthy dogs, starts multiplying rapidly. This tends to occur in young animals with an unhealthy immune system. It may have a genetic basis, as it tends to run in certain lines of dogs and seems to be more common in certain breeds. It doesn't cause itching, but the involved areas are subject to secondary bacterial infection.

My main thrust with natural remedies is to rebalance the immune system with herbs such as echinacea, antioxidants, and possibly acupuncture.

Sarcoptic mange is due to a transmissible parasite that burrows through the layers of the skin causing intense itching. It passes from pet to pet through contact, and can pass to humans, too.

Sarcoptic mange, in my eyes, is primarily a disease of the immune system. I treat it with herbs such as echinacea, antioxidants, and possibly acupuncture to help balance the immune system. Topical herbal remedies can help decrease infections and minimize parasite numbers. Topical and internal anti-itch remedies may also help.

■ Ringworm

Ringworm is a fungal disease that creates a round or oval non-itchy area of hair loss. Hair is lost because the fungus weakens the hair shaft and causes it to break off.

Some cases of ringworm respond to herbal topical remedies such as goldenseal, calendula, myrrh, or thuja along with internal herbs such as echinacea, cleavers, and yellow dock. Iodine preparations, used topically, may also be helpful, and once again, energizing the immune system may be beneficial.

■ Stress-induced dermatitis

This "disease" typically affects "Nervous Nellies" who cannot sit still. Affected dogs simply chew on themselves if they can't find anything else interesting to do.

The primary cure for this condition is to provide plenty of exercise and plenty of challenging tasks for the dog to do. Training games, food-dispensing toys, and frequent changes of activity can help distract and engage the dog in more healthful patterns. Flower essences may also be helpful when they are matched to the personality of the dog.

I think this is another time when a good proportion of these dogs have an itch caused by a misaligned vertebrae and they chew or dig at it. Chiropractic adjustments have helped a lot of these animals.

■ Food allergies

While food allergies may be the cause of some itchy dogs, research would indicate that skin cases are

not often related to

food allergies. In

dogs, the primary signs of food allergies

are most often related

to gastrointestinal up-

set. Furthermore, I'm

convinced that when

we get the gut back

into healthy balance,

the animal no longer

has a problem with

food allergies of any

kind. (For more on



Seek veterinary attention promptly if your dog suddenly experiences hair loss, as this could be caused by systemic disease.

this, see "Gut Feelings," March 2005.)

■ Miscellaneous conditions

Pyoderma, excessive numbers of bacteria in the hair follicle, may cause circular areas of alopecia or generalized excessive shedding. Natural treatment for pyoderma includes the use of topical and oral herbal remedies with antibiotic activity.

Some breeds, like the Chow-Chow, may have an arrest in the hair growth after clipping. This resolves spontaneously after several months of a lack of hair regrowth.

Many diseases are associated with hair cycle abnormalities, including endocrine diseases such as hypothyroidism and Cushing's syndrome; hereditary alopecia and hypotrichosis (the presence of less than normal amounts of hair); and familial zincresponsive dermatopathy.

Holistic approach

From the veritable plethora of potential causes for poor hair growth listed in this article, it should be obvious that there will be many different approaches to finding a solution – and each individual dog will require its own specific remedies.

My approach includes an individualspecific protocol that usually includes:

■ Reenergizing the immune system. I commonly recommend herbal remedies, antioxidants, omega-3 fatty acids.

■ Attention to diet, including making sure that all nutrients, but especially vitamins and minerals, are balanced. Supplements might include omega-3 and essential fatty acids.

Many holistic practitioners, and I am among these, have found that simply adding raw meat to the diet (beginning with about 1 teaspoonful per 20 pounds of the dog's body weight and gradually building up to about a quarter to a third of the total diet) will be the best skin and hair coat "medicine" money can buy.

Chiropractic adjustments have worked so often when I've been treating skin conditions, I feel they should always be included.

■ Specific natural remedies when indicated – for instance, flower essences and/ or calming herbs to calm the nervous beast, topical herbals for itch control and faster healing, and acupuncture or homeopathy when indicated. ★

Dr. Randy Kidd, a past president of the American Holistic Veterinary Medical Association, lives in Kansas with his wife, Sue, and his dog, Pokey. He's also author of Dr. Kidd's Guide to Herbal Dog Care and Dr. Kidd's Guide to Herbal Cat Care (see "Resources," page 24).

Knowledge Is Key

Subscribers learn, their dogs thrive – and we're happy!

our article "Diets and the Older Dog" (WDJ December 2006), asserting that kidney diseased dogs do need protein, is right on!

Before my WDJ days, I owned a Sheltie who was diagnosed with kidney disease. In the first stages he started refusing to eat. He had dropped from a lean 28 pounds to 24 pounds. I didn't know what to do so I blended his dog food in with some mixed vegetables. This appeared to work and at his next visit to the vet's office he had gained back two pounds.

However my vet recommended the Hill's k/d canned diet to me saying that low protein is better for my dog with kidney disease. Instead of listening to my gut instinct, I started feeding the food.

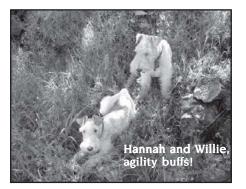
When I finally had to euthanize my dog due to his severe kidney failure (while religiously feeding him this diet that was supposed to help him), he died at 18 pounds with no muscle mass on his body at all. He literally looked like a skeleton with skin and fur hanging off of it.

After my Sheltie died I learned two things: listen to your gut instinct and don't listen to your vet's diet recommendations unless they go with your gut instinct. Knowledge is key and I'm just glad WDJ is around for me for the next go around when my Corgi girl grows old!

> Tiffany Birkinbine via e-mail

he excellent article on agility training ("Leaping to Attention," December 2006) could have been written about my dog, Hannah. I acquired my two Wire Fox Terriers about 18 months ago, when Hannah was 9 months old and Willie was 12 weeks old.

When I got Hannah home, I discovered she was absolutely terrified of everything – cars, noises, people, and especially dogs. She would cringe and try to escape, but if a dog got close to her she would snap and lunge at them. I was horrified! I didn't know what to do to socialize her, since it's



difficult to get other dogs and people to tolerate this.

By chance, I was walking through the fairgrounds nearby and saw a woman putting up an agility course. We chatted, and she suggested bringing Hannah to classes just to watch. I went for two months, twice a week, sitting in the bleachers holding Hannah, who was trembling like a bowl of Jello. After about a month she stopped shaking. After a little while longer she became interested in what was going on, then tried to sniff at the dogs, etc.

I then enrolled her in beginning agility, thinking it would give her confidence. Well, it worked! She became the star of her class, and she *loves* it. Her energy and playfulness have made her a natural. The agility classes were made to order: a fun game, dogs who couldn't care less about her, and therefore posed no threat, an outlet for her energy, and all that positive feedback and encouragement. My other dog, Willie, is good too, but Hannah has been transformed from a fearful dog into a dog bursting with confidence and enthusiasm. And it's so much fun for all of us.

> Diana Chapman Ferndale, CA

fter reading "Shots Fired" (November 2006) about vaccines, I want to share my experience using titer testing to satisfy licensing requirements in a state that requires rabies vaccinations.

Our dog Molly came to us as a two- or

three-year-old stray in 1988. She's a pit bull mix (maybe with German shepherd?) and a sweetheart. We had her vaccinated for the first time after she recovered from a condition she had when we first found her, salmon poisoning – no, not salmonella; *salmon* poisoning. It's the result of a fluke that dogs get by eating raw salmon in the Pacific Northwest, deadly to most.

My recollection is that she handled that first vaccination okay, but went on to have ever-more-severe reactions over the years. The last time we had her vaccinated, August 21, 2002, she was ill and depressed and our fairly conventional vet prescribed Benadryl.

Because of her reactions, the vet and we agreed to skip her next regular rabies shot and then switched to titering in March of 2005, based on your article ("Take the Titer Test") in December 2002. Our vet had never done this before for licensing purposes, but read the WDJ article at our request and willingly forged ahead.

With the results showing strong immunity, the vet contacted our state veterinarian about using the titer results for licensing. The state vet said that the titer results should be sufficient and added that if the county (the actual licensing agency) gave us any trouble to let him know. The county granted us a one-year license (because that's all we asked for) based on the titer and a letter from our vet without question.

We ran another titer in June 2006 and requested a three-year license based on those still very strong results. No problem; license issued.

So, those who live in states requiring rabies vaccinations may find that the vaccine may not be required if you can show strong titer test results and a history of reactions to vaccines. I hope this will be of help to others trying to avoid the overvaccination of their dogs. Who knows? We may end up educating the licensing "community" and changing state laws.

> Carol VanHouten Sheridan, OR 🗳

articles from back issues: training, health **are** product reviews

□ 1/07 Gear of the Year • We're Positive (Trainers) • Acupressure for Worried Dogs • In the Dog's Kitchen • Perspective: Use It or Lose It • New Tricks for a Stick (Targeting)

□ 12/06 Positively Australia: How Training Differs Down Under • Diet and the Older Dog • Agility for Reactive Dogs • Pica and Coprophagia • Practice Management: You and Your Vet

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The Association of Pet Dog Trainers (APDT) has references to member trainers in your area. Call (800) 738-3647 or see apdt.com.

Please note: APDT's membership is composed of trainers from across the spectrum of training philosophies. Membership does not necessarily ensure all members employ similar training methods, nor does APDT set standards of skill or competence. APDT encourages (but does not require) its members to use training methods that use reinforcement and rewards, not punishment, to achieve desired behavior.

CALENDULA

Greg Tilford is a well-known expert on herbal medicine for animals. An international lecturer and teacher of veterinarians and pet owners alike, Greg has authored or co-authored four books on herbs, including *All You Ever Wanted to Know About Herbs for Pets.* He is also the president and formulating herbalist for Animal Essentials, Inc., in Carlsbad, CA. (888) 551-0416; animalessentials.com

FidoDerm is an all-natural herbal spray that contains calendula and aloe. Made by Animal Essentials, it can be used topically to relieve itching and skin irritations. Animal Essentials, Inc., Carlsbad, CA. (888) 551-0416; animalessentials.com

BOOKS

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

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

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

HOLISTIC VETERINARIANS

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

CORRECTION

In the January 2006 issue, we mistakenly omitted the contact information for author and trainer Caryl-Rose Pofcher. Her training facility is located in Amherst, Massachusetts. My Dog Training, LLC, (413) 256-3647, mydogtraining.net

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