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# The Whole



# Dog Journal™

A monthly guide to natural dog care and training

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# Seek and You May Find

*It's obvious, once you know what to look for.*

BY NANCY KERNS

**W**hat, now even our dogs are all stressed out? Is this something we really need to worry about? Or just yuppy puppy pseudo-angst?

That probably would have been my reaction if, a decade or so ago, I had read an article about signs of stress in dogs. Today, though, I get it. Trained to recognize the telltale body language and behavior of on-edge dogs by WDJ's professional trainer contributors, I now see stressed-out dogs just about everywhere I go.

When I first read Pat Miller's article on this topic ("Stress Signals," facing page), I could plainly picture a number of dogs in my own life who regularly exhibited certain stress signals. There was my parents' mixed-breed, Andy, who would stop in his tracks and seemingly idly scratch his ears with a hind foot if any of our voices sounded angry or loud. My darling Border Collie, Rupert, used to flick his tongue out and lick his nose constantly around strangers and especially small children.

Carly belongs to a family I know well. It's become a tradition for me to take a photographic portrait of their sons every Christmas, and Carly is required to be in the pictures, too. We've always thought it was funny that Carly *always* yawns repeatedly and deeply every time we make her sit for these portraits. In fact, we save and collect these comical yawning shots from year to year. Is it the sitting still, being called (to make eye contact with the camera) without being allowed to move, the noise of the camera? Whatever it is, I now realize something about the experience is stressful for her, and her yawning helps relieve that anxiety.

A few times a year, I dog-sit Paws, a high-

octane yellow Lab, when his family goes on vacation. At seven years old, Paws still acts like an uncouth puppy. He's so frantic and whines so loudly that it's quite unpleasant to take him anywhere. I recently brought him to a do-it-yourself dog bathing facility, where he whined so constantly and at such a high volume throughout his bath that I half expected a round of applause from the other customers when we left. Also, while he can take treats from my hand with the greatest of delicacy and care at home, when we work on his training out in the world, he snaps and grabs at them, often biting my fingers by mistake. But now I get it. His hyperactivity and whining are not just misbehavior; they are signs that he is incredibly stressed and overwhelmed when he *does* get taken out.

Pat gives a number of good reasons for us to pay attention to our dogs' stress signals (bite prevention is one very compelling rationale).

Less dramatic but just as tragic is the fact that dogs, like all other mammals (humans included), have a difficult time learning and retaining what they have learned when they are stressed. Numerous studies with a wide variety of species have shown that increased levels of cortisol (a potent hormone released during stress) impair the brain's ability to process and store information.



Understanding this will certainly give me more patience with Paws. It will also change the way I'll work with him in the future, so he can relax and retain his lessons after all these years. *NK*

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

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# Stress Signals

*Learn to recognize signs of (and then reduce) your dog's stress.*

BY PAT MILLER

Recently, there was a video clip of a two-legged dog making the e-mail rounds. Faith, a gold-colored Lab mix, is missing her front legs due to a congenital deformity. Several people sent me the clip with their comments about how wonderful it was that the dog could walk and hop around on her two hind legs and lead a relatively normal life.

I watched the clip a number of times, and found the footage more disturbing than uplifting. I was concerned that *every person* who sent me the clip thought Faith looked “happy.” I wondered if we were watching entirely different videos! What *I* saw was a dog who was noticeably stressed in almost every bit of the footage, with the exception of a few seconds showing Faith lying under the covers in bed with her owner.

I suspect that the people who sent me the video saw the heartwarming miracle of a dog who survived against all odds. I saw a



**It's difficult to see in black and white, but what looks a bit like an icicle drooping out of this little dog's mouth is, in fact, a long rope of drool. He had planted himself by the gate of a dog park and was clearly ready to leave, although his owner hadn't noticed.**

The Whole  Dog Journal™

## WHAT YOU CAN DO . . .

- **Observe your dog closely and make a list of the behaviors he manifests when stressed. Watch for those subtle ones!**
- **Study the list to determine which stressors you can remove from your dog's environment. Create a plan to change his association from negative to positive with as many of the stressors as possible.**
- **Watch other dogs you come across and make note of their signs of stress to improve your stress observation skills.**

dog who was stress-panting, ears pinned against her head, eyes large, anxious whenever her owner walked away from her, and avoiding contact when admiring members of the public reached out to touch her. Why was there such a huge difference between our interpretations of the dog's behavior?

Please note: I'm not saying Faith appears to be on the verge of biting someone, or has any tendency at all toward aggression. But she certainly does appear stressed – at least when she's been filmed.

Many of the folks who sent Faith's clip to me are above-average dog people. They read WDJ, frequent good training e-mail lists, and read the right books. If *they* missed a package of behaviors that signaled to me that Faith was not calm and relaxed, it's not surprising that so many *average* (and worse) dog owners are fairly poor at recognizing signs of stress.

The smart, aware owner is always on the alert for signs that her dog is stressed, so she can alleviate tension when it occurs. Those whose dogs are easily stressed often

become hypervigilant, watching closely for tiny signs that presage more obvious stress-related behaviors, in order to forestall those unpleasant reactions.

If more owners were aware of the subtle signs of stress, fewer dogs would bite. That would be a very good thing.

## Why de-stressing helps

There are many reasons why it's important to pay attention to stress indicators, including the following:

- Stress is a universal underlying cause of aggression.
- Stress can have a negative impact on the dog's health.
- The dog's ability to learn is impaired when she is stressed.
- Dogs respond poorly to cues when stressed.
- Negative classical conditioning can occur as a result of stress.



**Cody: Trembling, vomiting.**

For all of these reasons, and more, it's worthwhile to monitor your dog for signs of stress, and take appropriate steps to make his life a little easier.

### Signs of stress

Listed below are some stress behaviors that are often overlooked. With each behavior, the appropriate immediate course of action for you is to identify the stressor(s) and figure out how to decrease the intensity of that stressful stimulus. In many cases this can be accomplished by increasing the distance between your dog and the stressor, be it a child, another dog, a noisy street sweeper, a person in uniform, men with beards . . .

If possible, remove the stressor from your dog's environment entirely. For example, if he's stressed by harsh verbal corrections, shock collars, and NASCAR races on TV, you can probably simply stop exposing him to them. For stressors that can't be eliminated, a long-term program of counter-conditioning and desensitization can change the dog's association with a stressor from negative to positive, removing one more trigger for stress signals and possible aggression. (See "Touch Me, Touch Me Not," August 2004, to learn how to carry out a counter-conditioning and desensitization program.)

■ **Anorexia:** Stress causes the appetite to shut down. A dog who won't eat moderate to high-value treats may just be distracted or simply not hungry, but this is more often an indicator of stress.

■ **Appeasement/deference signals:** These don't always indicate stress. Appeasement and deference are important everyday communication tools for keeping peace in social hierarchies, and are often presented in calm, stress-free interactions.

Appeasement and/or deference signals are generally offered by a lower-ranking dog



**Carly: Yawning at photo shoots.**

to a higher-ranking member in a social group to promote the tranquility of the group and the safety of the lower-ranking member. When offered in conjunction with other behaviors, they can be an indicator of stress as well. Appeasement and deference signals include:

- **Slow movement:** Lower-ranking dog appears to be moving in slow motion.
- **Lip licking:** Lower-ranking dog licks at the mouth of the higher-ranking member of the social group.
- **Sitting/lying down/exposing underside:** Lower-ranking dog offers submission by lowering body posture, exposing vulnerable parts.
- **Turning head away, averting eyes:** Lower-ranking dog avoids eye contact, exposes neck.

■ **Avoidance:** Dog turns away, shuts down, evades handler's touch and treats.

■ **Brow ridges:** Furrows or muscle ridges appear in dog's forehead and around eyes.

■ **Digestive disturbances:** Vomiting and diarrhea can be a sign of illness, or of stress; the digestive system reacts strongly to stress. Carsickness is often a stress reaction.

■ **Displacement behaviors:** These are behaviors performed in an effort to resolve an internal stress conflict for the dog, and are not related to hierarchy. They may be observed in a dog who is stressed and in isolation (for example, a dog left alone in an exam room in a veterinary hospital), differentiating them from behaviors related to relationship or hierarchy.

Displacement behaviors include:

- **Blinking** (eyes blink at a rate that is faster than normal).



**Dog at park: Foaming at the mouth.**

- **Chattering teeth.**
- **Nose licking** (dog's tongue flicks out once or multiple times).
- **Scratching.**
- **Shaking off** (as if wet, but dog is dry).
- **Yawning.**

■ **Drooling or foaming:** This may be an indication of stress – or a response to the presence of food, or an indication of a mouth injury.

■ **Excessive grooming:** Dog may lick or chew paws, legs, flank, tail, and genital areas, even to the point of self-mutilation.

■ **Hyperactivity:** Frantic behavior or just restless pacing, sometimes misinterpreted as ignoring or "blowing off" owner.

■ **Immune system disorders:** Long-term stress weakens the immune system. Immune related problems can improve if dog's overall levels of stress are reduced.

■ **Lack of attention/focus:** The brain has difficulty processing information when stressed.

■ **Leaning/clinging:** The stressed dog seeks contact with human as reassurance.

■ **Lowered body posture:** "Slinking" or acting "guilty" or "sneaky" (all misinterpretations of dog body language) can be indicators of stress.

■ **Mouthing:** Willingness to use mouth on human skin – can be puppy exploration or adult poor manners, but can also be an expression of stress, ranging from gentle nibbling (flea biting), to hard taking of treats, to painfully hard mouthing, snapping, or biting.

■ **Obsessive-compulsive disorders:**

These include imaginary fly-snapping, light and shadow-chasing, tail-chasing, pica (eating nonfood objects), flank-sucking, self-mutilation, and more. While OCDs probably have a genetic component, the behavior itself is usually triggered by stress.

■ **Panting:** Rapid shallow or heavy breathing – normal if the dog is warm or has just been exercising but can be a sign of stress in the dog who is not physically exerting himself or is over-warm.

■ **Stiff movement:** Tension can cause a noticeable stiffness in leg, body, and tail movements.

■ **Stretching:** To release stress-related tension in muscles, many dogs perform elaborate, deep stretches (may also occur after sleeping).

■ **Sweaty paws:** Damp footprints can be seen on floors, exam tables, or rubber mats.

■ **Trembling:** May be due to stress (or cold!).



**A portrait of three stress cases, from left to right. Paws is whining. Cooper is stress-panting, even though it's not hot. Rupert keeps licking his nose.**

■ **Whining:** This high-pitched vocalization, irritating to most humans, is an indication of stress. While some may interpret it as excitement, a dog who is excited to the point of whining is also stressed.

■ **Yawning.**

As I reread this list, I find myself making note of my own dogs' signs of stress, past and present. I recall the time my dearly missed Pomeranian, Dusty, was earning the third leg of his Companion Dog degree. As I released him from the three-minute Long Down, I noticed tiny, sweaty pawprints on the rubber show-ring mats where his little paws had rested. Only in that moment did I realize how stressful that exercise must have been for him.

Our sound-sensitive Corgi, Lucy, trembles violently with the approach of a thunderstorm, long before I can hear the distant booming, while Tucker, our Cattle Dog-mix, just comes and leans against me – also well before I can hear the storm. With dogs like those two, who needs weather forecasters? Dubhy, our dog-reactive Scotty, normally takes treats with exceptional gentleness – except when he's stressed in the presence of another dog. Then it's fingers beware!

Even we humans succumb to the natural biological need to use body language to express and relieve stress. I used to show hunters and jumpers (horses). Every time I sat on my horse outside the over-fences classes waiting for my turn to compete, I would be afflicted with the uncontrollable need to yawn – and yawn – and yawn. Only recently did I realize why. Stress! It affects us all. ✨

*Pat Miller, CPDT, is WDJ's Training Editor. Miller lives in Hagerstown, Maryland, site of her Peaceable Paws training center. For book purchasing or contact information, see "Resources," page 24.*

## "Without Provocation"

Almost every "Dog Mauls Toddler" headline is followed by an article that includes, among other things, these two phrases:

1. "The dog was always good with children," and,
2. "The bite was unprovoked."



Both statements make me cringe. Most people who think their dogs are "good with children" don't realize that their dogs only *tolerate* children – the dogs are actually stressed in the presence of children, at least to some degree. These dogs usually show low level signs of stress that would warn an observant owner that they really don't think little humans are all that great after all. Dogs who are truly "good with children" *adore* them; they don't just tolerate them. They are delighted to see children, and, with wriggling body, wagging tail, and squinty eyes, can't wait to go see them. Anything less than this joyful response is mere tolerance.

With the very rare exception of idiopathic aggression – aggression for which there is no discernible cause – every bite is provoked *from the dog's perspective*. We, as humans, may feel the bite wasn't justified or appropriate, but rest assured the dog felt justified in biting. In many case, the provocation is pretty apparent from the article: the dog was kept on a chain; the dog had a litter of puppies; the toddler was left outside in the backyard with a dog who had just been fed. In each case, the dog was stressed beyond his or her ability to control his bite.

Raise your stress awareness. Examine news reports about dog attacks to see if you can identify the possible stressors and provocation in each incident. Then be sure to protect your own dog from those potential bite-causing circumstances.

# Building Credibility

*A conversation with Dr. Susan Wynn, a science-based holistic vet.*

BY NANCY KERNS

**F**requently, we refer to “holistic” veterinarians in the pages of WDJ, as in, “Discuss this with your holistic veterinarian.” What we generally mean by this is a vet who offers her patients complementary and/or alternative methods of healthcare, in addition to her conventional Western medical treatments. The goal of holistic practitioners is to look at the entire animal patient – body, mind, and spirit – and to do more than treat his illness in times of crisis; they must also promote his total wellness, with an eye toward disease prevention.

Nutrition plays a huge role in holistic medicine, both in preventing and treating disease. Advanced training in nutrition is often a cornerstone of any holistic veterinarian’s “toolbox,” enabling the practitioner to make smart, targeted suggestions for her patients’ diets and supplementation.

The rest of the holistic vet’s tools may differ widely. Some pursue advanced training in Traditional Chinese Medicine (TCM), and use Chinese herbal medicine and/or acupuncture in their practices. Some become certified animal chiropractors. Some use Western herbal medicine or homeopathy. Some use esoteric tools, such as kinesiology, Reiki, medical intuition, or crystals.

As varied as the professional offerings are, however, it seems to us that there are simply not enough holistic practitioners. In the parts of the country where interest in alternative medicine is high, the most competent doctors often seem to have crazily busy practices, which can make it hard for them to recruit, train, and retain additional vets, which, in turn, can lead to the practice owners’ early burnout. In other parts of the country, nonconventional practitioners sometimes go out of business before they can find enough clients to support themselves.

So when we say, “Ask your holistic veterinarian,” some of our lucky readers (especially on the coasts) can make a mental note to do just that, while many others grit their teeth in frustration. “But I don’t *have* a holistic vet!” they howl. (We know this because they often call us to howl!)

All we can do is to suggest that they contact the American Holistic Veterinary Medical Association (AHVMA) in order to look for a practitioner near them; we put the contact information on page 24 of every issue.

But Susan Wynn, DVM, is doing more than that. Dr. Wynn, AHVMA’s current president-elect, has made it a mission to help bring an appreciation for holistic medicine to veterinarians, and vice versa. She is author or coauthor of three books aimed at vets interested in holistic medicine: *Complementary and Alternative Veterinary Medicine: Principals and Practice*, written with Allen Schoen, DVM, and published in 1998 by Mosby; *Emerging Therapies: Using Herbs and Nutraceutical Supplements for Small Animals*, published in 1999 by the AAHA Press; and *Manual of Natural Veterinary Medicine: Science and Tradition*, written with

Steve Marsden, DVM, and published in 2003 by Mosby. Dr. Wynn and Barbara Fougère, BVSc, are currently completing a book for Elsevier (due to be published in late 2006) on herbal veterinary medicine.

While obviously a student and fan of some forms of holistic medicine, Dr. Wynn does *not* have equal regard for all complementary and alternative medicine (often referred to as CAM). She devotes much of her time to critically reviewing research supporting the use of veterinary CAM, and a portion of her lectures to conventional and holistically inclined veterinarians always include references to “evidence-based medicine.”

In addition to a busy lecturing schedule, writing books and papers, volunteering for AHVMA and the Veterinary Botanical Medicine Association (VBMA), Dr. Wynn sees patients three or four days a week at the Bells Ferry Veterinary Hospital in Acworth, Georgia.

I’ve heard Dr. Wynn speak several times at AHVMA’s annual conferences, and always left with a notebook completely filled with undecipherable scrawls (she speaks quickly and covers a *lot* of useful material!). Recently, I had the pleasure of hearing her make a presentation – and the opportunity to interview her – at a venue close to home. Dr. Wynn was an invited speaker at the 2006 symposium of the Holistic Veterinary Medicine Club at the University of California, Davis, School of Veterinary Medicine, sponsored by Natura Pet Products. Fortunately, this time I was permitted to bring a tape recorder!

**D**id you have an interest in holistic medicine back in vet school?

No, I wasn’t exposed to it until after I got out of vet school. I did an internship in Washington, DC, and there was a holistic vet in that practice. She used a lot of homeopathy, but what really got my attention is that she would change the diets of almost every dog she saw, and I witnessed some amazing changes. That’s how I got interested in nutrition.



*What about herbal medicine, which has become an area of specialty for you? Are herbs the closest thing to your heart?*

Yes, nutrition and herbs. I was a gardener when I was a little kid, and I still really enjoy gardening. But herbs and nutrition are

related. To me, they are simply molecules that our bodies understand. I really enjoy working with them.

*I understand you have a strong bias toward the use of whole herbs.*

Every herbalist does. That's what herbal medicine is. It's the scientists who want to take a single molecule out and study it to death, and that's fine, if it turns out to be safe and effective. But to me it's inefficient. We understand how the whole herbs work. We have an empirical database that's 2,000 years old, in many cases. So why aren't we studying whole herbs?

*Where do you start with a new patient, when the dog is a mess?*

I change the diet.

*To what?*

To something different! Obviously, it's an individual thing, but if they have been on lamb and rice, I suggest switching to fish and potato. We look at what the dog has been fed, and feed him something else. Sometimes I suggest changing the *form* of the diet. If it's commercial, try homemade. If it's homemade – people don't want to hear this! – try a commercial diet.

There are data out there suggesting that the overwhelming majority of published recipes that claim to provide a complete and balanced diet are not – they are actually deficient. And these are recipes in some of our favorite authors' books! Often, I put my patients on a more reliable source of a complete and balanced diet and see what happens. People don't want to hear that, but it helps sometimes.

*So, you might suggest that someone who is using a homemade diet try a commercial frozen raw diet instead?*

Sometimes, I suggest a kibble. I like the complete and balanced raw frozen diets, so that could work as well, but if the dog has already been on something like that, and still looks a mess, sometimes you have to change the form completely.

*In WDJ, I try to tell dog owners to improve their dogs' diets, no matter what they are feeding. Of course, some people are already feeding their dogs the ultimate raw, grass-fed, home-prepared diet . . .*

But you are making judgments about what constitutes an improvement, and I don't think we know enough about nutrition to do that. I've seen too many dogs on

a good, supposedly balanced homemade diet improve when they were put back on kibble. I'm not smart enough to know why some improve. I think it's a pretty artificial system to say we know this is better than that; to me, the dog is the only one qualified to tell us what is best – the *dog* tells us. And we just have to keep trying things until we find something that works for him.

I do have some biases, of course! My big thing is variety. A lot of people, I think, when they read your kibble issue (dry dog food reviews), go "Okay, this is the one." You are very careful to *not* say "This one is the best," but somehow they make those determinations. And my whole thing is, "No, there isn't just one 'best' food. You've got to try a lot of things."

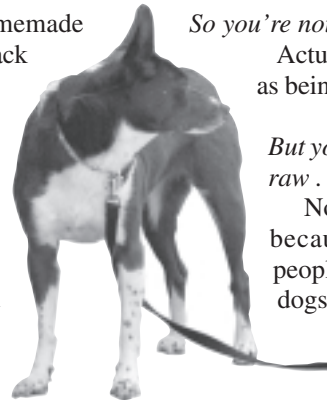
Variety is especially important in puppies. It's clear that we're seeing more allergy and immune-mediated disease in dogs. It's now documented in people, too, where it wasn't so much, say, 10 years ago. In my opinion, one of the biggest contributors to this is the fact that many people put their dogs on one diet for the dog's entire life. Often, eventually, the dog develops an allergy to the ingredients in that food.

The immune system learns by being exposed to a lot of variety, so I think with puppies in particular we have to start people out right and say "Use variety; don't pick just one food."

I'm also now recommending that people give probiotics for the first six months. The data in people are really interesting. Probiotics are kind of my new thing.

There are a couple of really interesting studies where they gave probiotics to infants who came from families with a predisposition to developing atopic dermatitis – eczema. In this study, they gave one group formula and another [group received] formula plus probiotic. There was a 50 percent reduction in the incidence of atopy in the infants fed the probiotics. To me, those are *stunning* numbers coming from a large clinical trial. They followed the babies out for four years and they still didn't develop allergy as much. That's *such* a discovery.

I think we need to teach people from the beginning about the hygiene hypothesis: don't be too clean, don't be too fast to put your puppy on antibiotics for just a couple of little papules, give them a variety of diets. That's what holistic medicine is, of course: prevention.



*So you're not a diet purist?*

Actually, I have a reputation as being anti-raw.

*But you are not actually anti-raw . . .*

No! I'm not anti-raw! But because I *have* told *some* people they should put their dogs on a commercial diet, some of the diehard raw advocates can't stand me. I've been

kicked off some of the raw feeding lists because I won't make some kind of statement that I'm exclusively for raw feeding.

Here's the thing: If your dog is not doing well on a home-prepared, raw diet, you need to do something different! I see many people ignoring evidence that is in front of their very eyes, because they believe so strongly that what they are doing with the diet is the "best" – even if their dog looks and feels awful. If it works for your dog, if he looks great, raw feeding is fabulous. But if you come in to my clinic and you are using a raw feeding plan and your dog doesn't look good, I might tell you to change. That doesn't mean I am anti-raw.

Frequently, the dog is having a hard time because he's allergic to something in the diet, but because the client is so convinced they are doing the right thing by feeding a home-prepared, raw diet, they sometimes don't consider that the dog might be allergic to something in the food. I've had patients whose raw-fed dogs had horrible skin conditions, and they spent *years* trying homeopathy and all sorts of other stuff, when the problem was in the diet all along. That's upsetting to me.

*They couldn't see the forest for the trees.*

Right.

Here's another problem that seems to arise more frequently among the raw feeders: When we *do* decide to put a dog with signs of allergy on an elimination diet, we often find there isn't anything the dog hasn't eaten that we can use for the elimination trial. Because so many raw feeders are such advocates of feeding variety – *and* because so many pet food companies now offer novel proteins like duck, rabbit, and venison – we often find ourselves with nothing to use for an elimination diet.

I've had to send clients off to get kangaroo or alligator from Oma's Pride (a frozen, raw food maker) to use in an elimination diet, because the client had at some time or

another fed everything else. You have no idea how expensive it is to feed alligator to a German Shepherd! It's really too bad. So many people are feeding novel proteins, for no good reason. Or mixing the novel meats with common meats.

*So your advice to owners is to stay away from novel proteins unless you absolutely have to go there?*

Yes, steer clear of the novel proteins unless you are doing an elimination diet. I mean, there is plenty of variety in fish, chicken, beef, venison, turkey, lamb, and pork. Go ahead and use those, and keep back the kangaroo and duck and rabbit for an emergency.

The other part of this is, people also have to learn how to properly construct an elimination diet trial. People come in (to the clinic) and say, "Well, I've tried rabbit, I've tried duck." But they tried it while they were still giving the dog pig's ears and Milk Bones.

*That's a good idea for a WDJ article! I'll get on that! What are your other pet peeves, things you wish the average dog owner would learn?*

That's the big one. I see a lot of dogs with allergies.

*How do you feel about the really far-flung unconventional therapies?*

I've heard people say, "Well, it can't hurt." I have a problem, though, when the treatment delays proper therapy. It's obviously not an issue if the animal is not uncomfortable, but for me, holistic medicine means the animal has to be comfortable throughout. Medicine is supposed to mitigate pain and discomfort, so that's the bar I use.

*I worry that when people try the really far-out stuff, they tend to run out of hope and money. I've seen people give up, saying they've tried everything, but all they've really tried is the weird stuff.*

That reminds me of another pet peeve: When owners get sucked into using just one practitioner, even if that person doesn't seem to be helping the animal.

Owners need to use second opinions more. You've got to remember that whole hammer and nail thing ["If all you have is a hammer, everything looks like a nail"]. It really *is* all about teamwork now. You can't just use a homeopath or herbalist or a general practitioner who uses conventional

medicine; you have to build a team that can work together and communicate well. It's hard, but not impossible.

Here's another article idea for you: Teaching dog owners how to critically evaluate the results of a therapy, whether it's a diet change or homeopathy or whatever. In my practice, I have written up these visual analogue scales, and defined our outcomes to help owners give us better information about how the dog is doing, such as, "Goes upstairs: Zero means they don't even try, 100 means they bound up the stairs." You've got to be able to really critically evaluate the outcomes to help us decide what works.

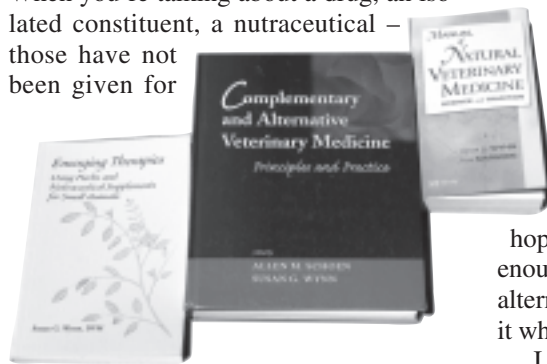
*Ah! Evidence-based medicine!*

In my opinion, evidence-based medicine is the gold standard to which all medicine, alternative or conventional, should aspire. I mean, case histories and anecdotal evidence are great – for the people involved in the dog's happy recovery. But they are not as useful as randomized, blind, controlled trials.

*How do you feel about animal testing?*

I like what the VBMA (Veterinary Botanical Medical Association) has come up with. When we get to the point where we can fund trials (which will be a long time from now), we decided we were not interested in experimental studies using lab animals; they have to be clinical studies on animals that are already sick. Good quality clinical trials can be done. There is no reason to do it any differently, in my opinion.

In herbal medicine it's a little different. When you're talking about a drug, an isolated constituent, a nutraceutical – those have not been given for



2,000 years. With herbs, we've got a pretty good idea of what they do; it's not like starting out with something potentially toxic, where you have to start in the test tube and then the lab animal.

In my opinion, clinical trials with animals who are already sick are the be-all, end-all.

*In the patients' homes?*

Sure, client-owned pets? It can be done; it *has* been done!

*Some players in the pet food industry are moving in that direction, testing their products in consumers' homes, or shelters . . .*

Yes, I recently read a study about a food trial with client-owned dogs done by people at the University of Georgia, where they compared two diets. The dogs were mostly vet students' dogs, or faculty dogs – but still client-owned dogs. It's been done, it's easy to do, you just gotta have proper design.

*Are the vet schools starting to take more interest in CAM?*

Absolutely. And the different schools are coming up with different focus areas, which is appropriate. They have a survey [of holistic veterinary medicine] class at the University of Minnesota, and their program is probably going to be TCM, because of the interests of some of the faculty there. I'm adjunct faculty at University of Georgia, where we offer an introduction to herbal medicine – mostly Western herbs. We don't have a survey course – the students don't get exposed to acupuncture and stuff like that. I understand that Tuskegee's is mostly acupuncture. Florida has a survey class . . . As the schools work out what they are interested in, I'm sure we'll get centers of excellence for various modalities.

*I've heard that on some campuses, some of the faculty are very resistant to classes in CAM being offered.*

I've only heard this secondhand, from vet students who say they have experienced resistance [about bringing CAM classes to the curriculum]. It's my guess that the faculty just does not have time to talk about what is good evidence and what is not good evidence.

That's the gap I try to bridge. I hope my books give the conventional vets enough evidence-based information about alternative medicine that they will consider it when appropriate.

I really didn't want to become yet another expert for dog owners. I don't usually talk to the dog magazines – you're the exception! I decided long ago that the most efficient way to promote evidence-based holistic medicine is to teach as many vets as possible about it. I think the bigger change is going to come from teaching the vets. And that's what I'm really trying to do. 🐾



# Don't Leave Home Without It

*Arnica is fantastic for treating activity-related strains and bruises.*

BY GREGORY TILFORD

He's fearless. Reckless. Senseless? Or perhaps my Australian Cattle Dog, Cedar, is just accident-prone. Yesterday he slammed head first into a door jam during rough play with my Shepherd-mix, Willow. Today he did a nose dive off a five-foot embankment in pursuit of his favorite all-natural dog toy: a pine cone. As always, he retrieved the cone, chewed it into a slobbery clump of fibrous goo, and dropped it at my feet. On his trot back I noticed he was limping, holding his front leg off the ground.

I palpate his shoulder and leg, ignoring the anticipated snarls and growls that he invariably produces with any unsolicited physical manipulation. Mobility seems fine, no tenderness upon touch, I cannot find any evidence of a fracture. It appears that he has suffered a minor sprain.

As always I immediately reach for my trusty little vial of homeopathic arnica 30C. The diminutive, white sugar pill is easy to feed – just a quick drop from the vial cap into his mouth and first aid is done.

In about 30 minutes Cedar's limp is barely noticeable. Could the arnica *really* work that quickly? Or is it just that his injury is less serious than I thought? I honestly don't know – nor do I care – because my little boy is feeling better. Plus, there is no harm in exercising precaution with a harmless, yet potentially effective homeopathic

remedy. In an hour or so I'll give another pill, and check his leg for swelling, but for now it seems that my reckless little dog got off easy again.

Indeed, arnica is an amazing first aid remedy. I use it for myself as well as my dogs, and I would never venture *anywhere* without it.

## Awesome herb

Preparations made from the bright yellow, daisy-like flowers of arnica have been used for centuries as an effective herbal medicine. Often used by professional athletes in the form of gels, liniments, or oil infusions, arnica is massaged into the site of sprains, bruises, or other closed-tissue injuries.

Its contributions to the healing process can be dramatic and almost immediate; the herb acts to quickly dilate peripheral capillaries and lymph ducts. This results in increased circulation and drainage of tissues that are engorged with fluids as a result of injury. The healing process is accelerated by the improved flow of lymph, blood, and platelets in and out of the affected area.

Topical preparations of arnica are especially valuable for treatment of horses and other large animals that are subjected to rigorous exercise. Arnica gels or oils can be used on dogs, but measures must be taken to prohibit dogs from licking it off, as preparations of this plant *can* be toxic if taken internally. This is especially true if any internal bleeding or inflammation is present. And, because arnica stimulates blood flow in tissues where it is directly applied, it should never be used to treat open wounds. Nor should herbal preparations of arnica be applied prior to a surgical procedure.

## Homeopathic arnica

The rules of safe and effective use of *homeopathic* arnica are quite different.

Comparing an herbal preparation of arnica with its homeopathic counterpart is

almost like comparing apples with the smell of apple blossoms.

Homeopathic arnica is made with such dilute concentrations that scientific analysis of the finished product cannot detect any physical presence of the herb itself; only the "energies" of the plant remain. Instead of working directly upon physical structures of the body through direct chemical interactions (as concentrated herbal preparations do), homeopathic arnica works by stimulating the healing process at sub-physical, bioenergetic levels. The theory is that only a few molecules of the plant are needed to trigger a positive response by the recipient body.

Sound far-fetched? Just wait till you use it and see the results!

I use "Arnica Montana 30C" – a preparation that is 3,000 times more dilute than the herbal tincture from which it is made. Homeopathic arnica is readily available through health food retailers and comes in a variety of potencies.

Homeopathic arnica is very safe and can be used as a first line of treatment for virtually any type of closed injury. I keep a bottle of the tiny sugar pills with me wherever I go – for my dogs and myself. When a twist, sprain, or overextension of a leg results in a limp, I just slip one tiny little pill (smaller than a peppercorn) into my dog's mouth and wait 30 minutes for a result. If no results occur, I repeat the dose one more time. In many cases, that's all that's needed.

Like any medicine, homeopathic arnica may not work for everybody. And if you suspect a bone fracture or other serious injury, get your pup to a vet. 🐾

*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 (Bowie Press, 1999).*



### WHAT YOU CAN DO . . .

- Look for arnica products in your local health food store.
- Keep homeopathic arnica on hand wherever you go with your dog. Administer for any bruise or strain.

# A New Look

*How to teach your dog to look to you (literally!) for direction.*

BY MARDI RICHMOND

**W**hen I first saw Laney, she was across the parking lot from the agility class I was teaching. Laney was a spinning, barking mass of black and white dog. Whenever the dogs in my class moved, Laney would leap in the air and start spinning and barking again. Her person, Bonnie Vogt, looked confused and distressed.

"I had no idea what I was getting myself into," Vogt told me at a later date. She'd met Laney just a few days earlier at a dog camp. Laney was attending the camp with her foster person and Vogt took a fancy to the young dog. The attraction was obvious; Laney was athletic, smart, driven, and eager to please. It wasn't until Vogt brought Laney home and took her to observe the agility class that Vogt discovered Laney's somewhat crazier side.

Laney is certainly not alone in her high arousal behavior. Many dogs have something that gets them *really* worked-up – skateboards, cats, and bicycles are common. For Laney, it can be anything that moves, including cars, balls, or dogs running an agility course.

"Look" is a behavior that can help you

The Whole  Dog Journal™

## WHAT YOU CAN DO . . .

- **If your dog becomes aggressive or is fearful around other dogs, use counter-conditioning and desensitization to improve his emotional response to them.**
- **However, if he becomes hard to restrain out of excitement – he really wants to go play or run with the other dogs – teach him the "Look" behavior described here.**



**Before:** As soon as Lilo spots the geese grazing on a lawn about 200 feet away, she becomes fixated and starts pulling hard toward them.



**After:** Lilo has learned that looking away from the geese and at Sandi's face is highly rewarding. She offers the "Look" faster than Sandi can deliver the treats!

manage your dog's response in these situations. It is an especially useful behavior for dogs whose excitement is triggered, at least in part, by movement, a prey drive, or the desire to fetch or herd.

"Look" can be part of an overall program to help your dog learn to behave better in the presence of those things that make her crazy.

"It really works," says Vogt. Today, Laney can walk politely down busy streets (with cars rushing by), past moving dogs, and even ignore skateboards. Vogt acknowledges that Laney's success at overcoming her crazies began with the Look.

## There is a lot to it

Look is a combination behavior. It is more than the "Leave it" or "Off." It is more than the ever-popular "watch me." It involves the dog breaking eye contact with the arousing object, person, or animal (whatever triggers the dog's manic behavior); turning his head away from that trigger; making eye contact with you; and holding that eye contact until you give a release signal. This is a behavior that a dog can do while sitting still or moving, on leash or off. The Look is most effective when the dog learns to do all of this as soon as he notices the thing that makes him crazy – without you asking!

With a dog who gets overexcited when he sees skateboarders, for example, the Look works like this: You are walking down

the street and a skateboarder comes around the corner. As soon as your dog notices the skateboarder, instead of barking and lunging, he looks at you and keeps looking until the skateboarder is past and you give the release signal. You lavish your dog with fantastic treats, praise, or attention until the skateboarder is past.

Teaching and reinforcing the Look can certainly help a dog behave better in the presence of his triggers. But there is an added benefit for dogs whose reactive behavior is also motivated by uncertainty or fear. Generously rewarding the Look may also result in counter-conditioning the scary thing, so that it becomes less scary.

## Steps to training the Look

The key to being able to effectively use Look to help manage a dog who gets worked-up around dogs, skateboards, cars, cats, or anything else, is to train the behavior thoroughly before you ever use it around the things that make the dog "lose it." Here are the steps for building a strong and reliable Look.

### ■ Step one: Similar to "Leave it"

The first step is to teach your dog to leave something alone that he or she wants.

To begin, arm yourself with a handful of super delicious treats (such as fresh cooked chicken) and some rather boring treats (such as ordinary kibble). Put a bor-



**At first, Lilo licked Sandi's closed fist, trying to get the treat inside. When she stopped trying, Sandi immediately clicked a clicker and rewarded the dog.**

ing treat in your left hand. Have the super good treats in a pouch, behind your back, on a table, or in some other way close at hand but not available to your dog.

Present the boring treat to your dog in a closed fist (so he or she can smell it, but can't get to it). Allow your dog to lick, sniff, and try to get to the treat. The *moment* your dog backs or looks away from your closed hand a tiny bit, mark the behavior (with the word "Yes!" or the click! of a clicker, for example), and give your dog one of the top-quality treats from your other hand. Be very patient; some dogs will lick and mouth your hand for several minutes before they back off the first time.

Repeat several times until your dog immediately backs away from the treat.

Move the boring treat to your right hand and repeat the exercise.

### ■ Step two: Make eye contact

The second step to the "Look" behavior is teaching your dog to make eye contact with you when he backs off of the treat.

Practice the step one exercise until you are confident your dog will immediately back away from a closed hand holding a treat. Now, when he backs away, instead of clicking or saying "Yes!" immediately, wait for him to glance up at your face. Then click! or say "Yes!" and give your dog one of the super-delicious treats. Once again, be patient. At first, your dog will not know that you have raised the criteria for a reward. She may go back to the hand and sniff and lick some more. Wait. The moment she looks at you to figure out what you want, click! and give her a terrific treat.

Practice this several times with the boring treat in each hand. Don't worry if your dog is not staring into your eyes; just looking up at your face is enough.

Please note: Some dogs are not comfortable making or holding eye contact with people and have not learned that it is a re-



**When Sandi waited a moment before she rewarded Lilo for backing away from the treat, Lilo looked at her ("Hey! Where's my treat?"). Click! and treat for the look.**

warding behavior. For these dogs, looking at your face can be a little more difficult. If you have not already taught your dog that making eye contact with you is a valuable and rewarding behavior, practice it separately from this exercise. Try taking a treat and bringing it up to your eye. When your dog follows the treat and looks at your face, click! or say "Yes!" and reward with a treat.

### ■ Step three: Put it on cue

At this point, your dog will probably start "offering" you the look without you asking; this is great! In the long run, you will want to continue reinforcing the offered or automatic look. (See step six, below, for more on the automatic look.) But teaching your dog to respond to the Look cue when you ask can also be helpful.

You are ready to put the behavior on cue once your dog has the idea of looking away from the treat and into your eyes. Immediately *before* you present the fist with the boring treat, say "Look!" After he associates the word with the action, you can present the fist first, then say, "Look!"

A fun and added benefit of using the word "look" instead of something more common like "leave it" or "off" is that it is an easy word to slip into normal sentences. Think how impressed your neighbors will be when you can walk down the sidewalk and say to your dog, "Now don't even LOOK at that kitty," and he whips his head around and pays attention to you instead of the cat!

### ■ Step four: Make it more difficult

Once your dog can easily look away from a temptation and hold eye contact with you for about 10 seconds, raise your criteria in two ways: increase the length of time your dog holds eye contact, and increase the level of temptation offered by the thing he is supposed to be resisting.

Start this latter process by having your dog resist the temptation of very attractive treats, by having him look away from treats in an open palm, or by having him look away from a treat on the floor. You can work with different items, too. Practice with boring objects (such as a hat or towel) and gradually build up to more exciting objects (like his

## When to Use Look, and When Not to

For some dogs, the "thing that makes them crazy" is other dogs. Using an operant conditioning technique – like training the Look – is effective if your dog is triggered because he is overexcited or frustrated (for example, when he sees dogs running or chasing balls and he cannot join the game).

Using the Look or another operant behavior is also an option for dogs who are fearful or upset around other dogs. Rewarding the Look with liberal amounts of extra-special treats (such as fresh roast beef) in the presence of other dogs can have the "side effect" of helping your dog feel better about those other dogs.

For dogs who are fearful or "upset" around other dogs, however, using desensitization and classical counter-conditioning is another good (and sometimes the best) choice. In brief, counter-conditioning is when you start a flow of treats or other good things as soon as your dog notices another dog, and stop the treats as soon as the other dog disappears. Desensitization is exposing your dog to another at a subthreshold level – far enough away so that your dog notices the other dog, but is not upset. When your dog is comfortable with the presence of the other dog at that distance, you gradually decrease the distance between them, attaining a comfort level at each new distance before proceeding further.

These techniques work together to change the dog's emotional response, so he will be less likely to be reactive. In addition, when using counter-conditioning techniques, a skilled trainer in a carefully controlled environment can often "jump start" the *automatic* Look in a few repetitions. (For more information, see "Classical Conditioning," June 2001 and "Nuclear Reactors," November 2003.)

favorite toy or a ball). Practice with things your dog would normally want to investigate, such as trees he'd like to sniff when you are on walks. For your dog to get really good, you may need to practice with as many as 30 or more different items.

Increase the length of time your dog needs to hold eye contact, too. At first, mark the desired behavior with a click! or "Yes!" and give him a treat for just glancing at your face, then for holding it for a half a second, then a whole second, then two seconds, etc. Work up to a minute or longer.

Practice each of these increasingly demanding criteria separately. If you work on the length of time, use a boring treat in a closed fist. If you work on a more difficult object (like a better treat in an open palm), click at first for simply looking away, then for making eye contact, and then for holding the eye contact. Then put them together and practice with more difficult objects for longer periods of time.

At this point, start varying the rewards, giving less interesting treats for easier responses, and better treats for more difficult responses. Note: Do not yet practice with the *thing that makes your dog crazy!*

#### ■ Step five: Vary locations, positions

Practice in different locations and with your dog in different positions, by setting up practice sessions in new places. Also practice with various levels of distraction. Again, start with the easier distractions and then make it more difficult.

Practice with your dog in different positions, too: in front of you, next to you, on either side, standing, sitting, or walking.

Practice both on leash and off leash. At first, do off-leash practice with items that are easier to resist or with some type of "safety" in place (like a screen over the top

of a bowl) so that your dog cannot get the treats or toys you are practicing with.

Try setting up a Look "course" where you have multiple items such as treats, toys, and odd objects set around your yard or the park. Include people and other dogs, too. Walk your dog past and around each object, person, or animal.

#### ■ Step six: The automatic look

The automatic response is part of what makes Look a powerful behavior. At various points while training this, your dog will most likely "offer" the look without your "asking." This is GREAT and should be rewarded generously, with the best treats possible, and with jackpots (rapidly feeding 10 or more treats). You want your dog to volunteer the Look any time he is unsure of himself.

Practice this behavior around a variety of items, some easier and some more difficult to resist. With enough practice, the Look will become one of the things your dog does when he doesn't know what else to do! You'll soon find that your dog will automatically look at you when he spots a former trigger; notice and reward this!

#### Trying it in the real world

Be sure your dog is ready to begin practicing in the presence of the *thing that makes your dog crazy* by testing him with different objects in different locations first. Make sure he can offer the Look in the presence of many different triggers, in many locations, and while in different positions. You want him to really understand this behavior, and have it well generalized, before practicing with the *thing that makes your dog crazy*.

To set up your dog for success, arrange your practice sessions so that you can con-

trol the distance between your dog and his trigger. At first, practice with the *thing that makes your dog crazy* far enough away that your dog doesn't actually get worked-up. Practice repeatedly so that your dog automatically looks at you every time he sees his former trigger.

Use the absolute best rewards possible. This is the time to bring out the roast beef, smelly sardines, or canned chicken.

Gradually (over several practice sessions or possibly over several weeks of practice) move your dog closer and closer until he can do the behavior with the *thing that makes him crazy* within a few feet.

Continue watching for those "offered" Looks. Reward generously and give jackpots. This helps your dog learn that he can disengage on his own and that you will notice and appreciate it!

#### "Look" is a great foundation

I've seen the Look work wonders with many dogs, including Laney and one of my own dogs. I've watched dogs with high prey drive learn to ignore cats and squirrels and look at their handlers instead. I've known dogs who would like to chase joggers, skateboarders, and bicyclists learn to Look instead of lunge. I've watched dogs who are reactive with other dogs learn to walk through groups of strange dogs while looking at their person.

Look is a powerful foundation tool for managing high-arousal problems. When a dog can Look reliably when asked *and* offers the behavior in the face of potentially arousing stimuli, he is well on his way to learning calm behavior in any situation. 🐾

*Mardi Richmond, MA, CPDT, is a writer and trainer living in Santa Cruz, California, with her partner and two wonderful dogs.*

## Avoid These Common Mistakes When Training the "Look"

When your dog is learning the "Look," avoid these mistakes:

1. Do not expect your dog to be able to perform the "Look" as well with the *thing that makes him crazy* as he can with less distracting items, people, or animals – until he's had a lot of practice! It is much more difficult for a dog to do this behavior once his emotions are engaged.

2. While you *do* want to avoid having your dog become reactive or barking and lunging, do not try to "pre-empt" your dog's acting out by asking him to "Look" before your dog notices the arousing animal or object. This can backfire; your dog may ac-

tually learn that the "Look" is a precursor to the arrival of the *thing that makes him crazy*. (If you say "Look!" and instead of looking, your dog scans the horizon for the arousing object or animal, you may be asking for the look before your dog notices the trigger!) Instead, ask for the "Look" only after your dog notices the arousing animal or object. Prevent the worked-up behavior by creating distance or working at a lower intensity.

3. Once you've started practicing with the things that get your dog worked-up, continue practicing with less-stimulating objects so that your dog will not associate the behavior only with difficult or scary situations.

# Willard Water

*Some dog owners swear this substance helps treat anything effectively.*

BY CJ PUOTINEN

**W**illard Water is one of life's mysteries. Most people have never heard of it. Those who have, tend to use it religiously, even though they aren't sure what it is or how it works. They say it improves digestion, reduces migraine headaches, relieves arthritis, improves skin health, heals burns and wounds without scarring, helps balance blood sugar, treats gum disease, supports detoxification, lowers high blood pressure, alleviates pain, and is helpful in the treatment of dozens of other conditions, including cancer.

Its manufacturer makes no medical claims beyond reporting that Willard Water may have anti-inflammatory and analgesic properties, and that free-radical scavenger tests show it to be a powerful antioxidant.

What helps set Willard Water apart from other "wonder" products is that it was exam-



**When diluted to the label instructions, Willard Water is odorless and tasteless, yet some owners say their dogs prefer it to plain water.**

ined by a Congressional subcommittee on health and long-term care in 1980, investigated by the "60 Minutes" TV program that same year, and tested by the U.S. Food and Drug Administration. To date, all evidence has found Willard Water to be safe and non-toxic.

While some veterinarians might scoff at the claims made by Willard Water proponents, other holistic practitioners credit the product with amazing abilities to heal and balance. For example, Roger DeHaan, DVM, a holistic veterinarian in Kings Mountain, North Carolina, has recommended Willard Water for his canine patients since 1983. He mixes the liquid concentrate with drinking water for improved hydration and applies it to cuts, wounds, and other injuries. He even adds a small amount (10 cc) of full-strength concentrate to each liter of Lactated Ringers Solution before administering subcutaneous fluids.

## History of the catalyst

What exactly is this stuff? Its ingredients (water, fossilized organics, sodium meta silicate, sulfated castor oil, calcium chloride, and magnesium sulfate) don't sound like much – but their combined action redefines the behavior of water.

The addition of Willard Water concentrate to water is said to change water's molecular structure from a very stable tetrahedron to a chain of water molecules attracted by strong electrostatic bonds to very small electrically charged colloidal particles. The result, which its inventor called Catalyst Altered Water because it literally alters or changes water, penetrates where normal water can't.

Willard Water was developed in the 1960s by John Willard, Ph.D., a professor of chemistry at the South Dakota School of Mines. While consulting for an oil company, he searched for a way to remove the sludge that plagued oil wells. He found it in a formula he had previously developed to remove soot from Pullman railcars.

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## WHAT YOU CAN DO . . .

- **Get a free sample and try this versatile product.**
- **Add it to your dog's drinking water and food; this is said to result in improved digestion, behavior, and performance.**
- **Spray it on cuts, abrasions, sprains, bruises, and other injuries.**
- **Mix it with your dog's shampoo for an improved coat. Spray and brush for between-bath grooming.**

When Dr. Willard accidentally burned himself, the only water at hand was a dilute solution of the sludge-removal formula. To his surprise, the treated water immediately eliminated his pain and the burn quickly healed without scarring. He began to experiment on himself and his family, then asked friends and relatives to try his Catalyst Altered Water. Through the 1960s and '70s, word spread.

Soon people in South Dakota were using dilute solutions of Willard Water to treat burns, sprains, bruises, and other injuries. They added it to their drinking water, laundry detergent, shampoo, and bath water.

Farmers, gardeners, and greenhouse operators discovered that plants treated with Willard Water needed less fertilizer and had better root structure, stronger stems, higher yields, and more foliage, even during drought conditions.

Dr. Willard found that farmers consistently reported improvements in cattle within three weeks of switching to Willard

Water. Livestock raised on Willard Water showed greater resistance to shipping fever, a condition caused by the stress of crowded transportation, as well as reduced stress during weaning, branding, dehorning, and castration. Those on Willard Water recovered faster than control animals.

## Pet use

For all animals, Willard Water seems to act as a whole-body tonic. That is, it's safe to use in small amounts for long periods of time, during which it apparently helps to bring into balance all of the body's systems.

The following doses have worked well for dogs, but so have other concentrations. If you're experimental, try a little less or more and observe your dog's response.

For best results, use good-quality filtered, bottled, or uncontaminated water from a reliable source. Reverse-osmosis filtered water is highly recommended. Hard water, which contains high concentrations of minerals, is supposed to interfere with or slow the action of Willard Water.

Willard Water comes in two forms, dark and clear. "I use the dark concentrate," says Dr. DeHaan, "because it contains lignite and dozens of important trace minerals. I'm convinced that those minerals make a difference."

One fluid ounce (2 tablespoons) concentrate per gallon of water is the strength recommended for daily human consumption as well as for topical application on pets and people. This same strength is a good daily drinking water for animals with acute or chronic health problems or for any animals during hot weather or times of stress. (Note that these recommendations are for Clear Willard Water and Dark XLR-8 Plus Willard Water. The greatly diluted Dark XXX product requires 2¼ times the amounts listed here.)

The recommended maintenance water for healthy dogs, cats, cattle, and other animals not under stress is far more dilute, such as ¼ ounce (½ tablespoon, or just over 1 teaspoon) concentrate per gallon of water.

Use this solution to fill your dog's water bowl, which should be available at all times. Add it to dry, canned, or raw food. If you include grain in your dog's home-prepared diet, consider soaking it overnight in diluted

Willard Water to improve digestibility. To increase the grain's nutritional content, drain the jar and leave it open and on its side for a day or two. Grind or puree the sprouting grain before adding to food. Leftover pureed grain keeps well in the refrigerator for several days.

In her book, *Holistic Guide for a Healthy Dog*, Wendy Volhard, another long-time user of Willard Water, recommends adding diluted Willard Water to your dog's



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CLASSIC PHOTOGRAPHY, FARGO, ND

**Exceptionally clear-eyed Gus is a 6½-year-old Vizsla, owned by Charles and Kolleen Sunde, of Fargo, North Dakota. He's received Willard Water his whole life.**

drinking water when traveling to keep stress levels under control.

"Taking your own supply of drinking water is preferable," she says, "but if that is not possible, use what is available on your trip and add 2 tablespoons of diluted Willard Water to each bowl, so that your dog is not affected by the change."

Dr. DeHaan's only caution is to start slowly. He introduces Willard Water gradually and in small doses, giving small dogs 1 to 2 tablespoons of the dilute solution daily, adding it to drinking water or food. Medium-sized dogs receive 4 tablespoons per day, and large or giant breeds start with ½ to ¾ cup (4 to 6 ounces).

"Too much too fast can accelerate the detoxification response," he explains. "If your dog gets diarrhea, ease off a little until his system catches up." This temporary symptom is the only adverse side effect Dr. DeHaan has seen while treating thousands of dogs with Willard Water.

In Priest River, Idaho, Ralph and Rita Huddleston were distressed when their eight-year-old West Highland Terrier, Kramer, stopped acting playful and was unable to jump on their laps or into his favorite chair. He seemed to suffer from pain and a lack of energy.

"We ourselves have felt so much better since using Willard Water," they say, "that we decided to give it a try for our little friend. His condition disappeared as fast as it began, and Kramer is now his old happy self again. He knows when we are drinking our Willard Water and sits at our feet begging for a little sip, which we give him out of our hand. Of course, he drinks whatever he wants from his water dish."

Two years ago, Janice Walters of Belen, New Mexico, noticed that after using Willard Water for a few months, she had more energy and her prescription medications seemed to be working better.

She started giving Willard Water to her dogs and cat. "The first thing I noticed was they were drinking more water than usual," she says. "The cat has her own bowl, and the dogs share two half-gallon self-watering bowls. Previously I had to fill those containers every two days. Now it's every day. The dogs got more energetic, and Vixen's coat started looking shiny."

Vixen, a Golden Retriever/Shepherd-mix, is now 12, and Darby, a Lhasa-mix, is 11. "Our new dog, Chance, is a two-year-old Boxer-mix," she says. "He keeps the girls busy, and they keep up with him."

Walters, an animal rehabilitation specialist, is vice-president of a local rescue group. "I recommend Willard Water for everyone, but especially the dogs," she says. "I'm convinced it's one of the best things you can give an animal."

## Cancer

Willard Water's testimonials include many reports about cancer patients, including dogs who outlive their prognoses, or, in some cases, completely recover.

"Willard Water doesn't cure cancer," says Dr. DeHaan, "but it definitely supports the cancer patient. It does this in part by improving digestion and the assimilation of nutrients, which strengthens immunity."

For canine patients with cancer or other serious illnesses, the recommended concentration is the same as the maintenance amount for humans, 1 fluid ounce (2 tablespoons) concentrate per gallon of water.

Spraying or applying the same dilution to skin cancers is another support strategy. Diluted Willard Water can be sprayed or applied to any canine tumor or skin growth

several times per day. Simply apply thoroughly and let dry.

Any conventional, complementary, or alternative cancer therapy may work more efficiently in combination with Willard Water, which seems to improve the effectiveness of many prescription drugs, medicinal herbs, and supplements.

## Topical application

To use Willard Water topically, dilute 1 teaspoon concentrate in 1 quart water or use 2 tablespoons per gallon. Use this solution as a wash or rinse to clean and treat cuts, burns, wounds, or abrasions. Pour it directly on the affected area or use a spray bottle. Repeat the application several times per day.

Diluted Willard Water is said to be as effective in reducing pain in animals as it is in humans. Spray or apply it to sprains, bruises, trauma injuries, arthritic joints, and any area that is swollen or tender.

Wendy Volhard swears by Willard Water as a hot spot treatment. "It dries up the inflamed areas overnight," she says. "I also spray it on cuts to stop the bleeding and on insect bites to reduce the swelling and irritation."

An easy way to treat injured paw pads is to briefly soak the affected foot in a bowl or pan of diluted Willard Water, then let it air-dry.

To create a compress, soak a washcloth in the dilute solution and hold it in place for several minutes, or secure it with a wrapped towel or bandage. Repeat the treatment two or three times per day.

You can increase the effectiveness of any herbal compress or wash by brewing the herbal tea in a dilute solution of Willard Water, or simply add ½ teaspoon Willard

Water concentrate to each pint (2 cups) of tea. You can add ¼ teaspoon Willard Water concentrate to 1 cup (8 ounces) of any aromatherapy hydrosol (See "Essential Information," January 2005) to make the hydrosol more effective. Spray the treated hydrosol full-strength or add a teaspoon or a tablespoon to your dog's drinking water.

To improve your dog's coat, spray it with diluted Willard Water or treated hydrosol before brushing or grooming. Willard Water helps prevent dander, freshens the coat, and helps most dogs smell better.

Increase the effectiveness of your dog's shampoo by mixing ¼ cup shampoo with 1 cup diluted Willard Water. According to users who reported their results to Dr. Willard, this actually helps calm excitable or nervous show animals.

Use this mixture to scrub, rinse, reapply, and rinse again. If you use a conditioner, which may no longer be necessary, mix it at the same proportions. Finish with a final rinse of dilute Willard Water solution, an herbal tea made with diluted Willard Water, or a solution of 1 tablespoon hydrosol in 1 quart diluted Willard Water. A caution for humans: Willard Water added to shampoo, conditioner, or rinse water has stripped color from some dyed hair.

To treat any eye condition, spray diluted Willard Water directly into the dog's eye. Willard Water helps clear up conjunctivitis and other infections, and it's an effective first-aid rinse for the removal of debris. Clear Willard Water concentrate is usually recommended for use in the eyes, but many users report excellent results from rinsing or spraying eyes with dark Willard Water solutions. If desired, add a pinch of unrefined sea salt to make the solution slightly

salty. Tears are saline, and adding a small amount of salt makes the solution more comfortable.

Whenever you brush your dog's teeth or give her a tooth-cleaning rope toy to chew on, spray the toothbrush or toy with diluted Willard Water.

Diluted Willard Water can be used as an ear cleaner, too. Or you can add a few drops of full-strength concentrate to any liquid ear cleaner. Willard Water helps the solution reach farther and loosen wax and debris.

## Cleaning green

In addition to adding Willard Water to shampoos and conditioners, you can add it to any soap or cleanser, making housecleaning a safe, pet-friendly activity.

In 1991, shortly before Dr. Willard's death at age 84, I corresponded with him about Willard Water's effect on chlorine. He confirmed that extensive laboratory testing proved that small amounts of Willard Water neutralize or destroy chlorine. In fact, he warned against adding Willard Water to any load of laundry using chlorine bleach. "The bleach won't work," he said.

In reply to my questions about whether Willard Water concentrate would help preserve raw milk, he recommended adding 1 ounce per gallon. "We discovered this with an old Swiss cheese maker. Milk tastes richer and keeps fresh longer. You can do the same with raw juices." 🐾

*A long-time contributor to WDJ and author of The Encyclopedia of Natural Pet Care, Natural Remedies for Dogs & Cats, and other books, CJ Puotinen lives in New York with her husband, a Lab, and a tabby cat.*

## About the product

Willard Water has gone by many names over the years: Catalyst Altered Water, CAW Water, Carbonaceous Activated Water, Lignite Activated Water, LA Water, Dr. Willard's Water, and Real Willard Water.

Three versions of Willard Water are sold today: Clear, Dark XLR-8 Plus, and Dark XXX. The Dark XLR-8 Plus contains higher concentrations of trace minerals and nutrients than the Clear concentrate because of its added lignite. Dark XXX Willard Water is less expensive (but costs more to ship) because it is greatly diluted, requiring 2¼ times the amounts listed here to match the desired concentrations.

Willard Water is sold in plastic bottles. Dr. Willard recommended that the concentrate not be stored in glass because its long-term storage actually weakens glass and causes it to break.

Dr. Willard received over 20 patents on Willard Water, then spent his remaining years fighting patent infringers, including those who diluted and repackaged the extract. The original full-strength Willard Water is available from Nutrition Coalition in Fargo, North Dakota, which has a generous "give it a try" offer for new users. To receive a free 4-ounce bottle of Dark XLR-8 Plus Willard Water, which makes 4 gallons of diluted Willard Water at the normal strength or 8 gallons at the recommended pet maintenance strength, pay \$5.85 shipping and handling. Clear Willard Water is available at slightly lower prices.

To order any of these special offers, call Nutrition Coalition at (800) 447-4793 or (218) 236-9783, specify clear or dark, and mention that you read about Willard Water in WDJ.

See "Resources," page 24, for more information.

# Paeon to the Pancreas

*This organ plays a vital role in digestion – and in diabetes prevention.*

BY RANDY KIDD, DVM, PHD

**T**he pancreas is an elongated gland, light tan or pinkish in color, nestled alongside the small intestine and adjacent to the stomach. The organ is composed of two functionally separate types of glandular tissue, each which performs a vital and disparate role in the dog's body.

## Digestive functions

“Exocrine” refers to the process of releasing outwardly through a duct, so the majority of pancreatic tissue is known as the exocrine pancreas, because its secretions are delivered through the pancreatic duct directly into the duodenum (small intestine), where they assist digestion.

The exocrine portion of the pancreas contains grape-like clusters of cells (called acinar cells), each of which can produce more than 10 different digestive enzymes. Pancreatic enzymes digest proteins, carbohydrates, and fats. Enzymes that digest proteins could potentially be harmful to the



**There are a lot of clues that this dog may have pancreatic problems, which may predispose him to diabetes: he is very overweight and routinely gets into the garbage and onto counters looking for extra food. Another bad sign: See all the towels around the water bowl? He drinks a lot.**

The Whole  Dog Journal™

## WHAT YOU CAN DO . . .

- **Don't allow your dog to become overweight. Obese dogs have a higher risk of pancreatitis and diabetes.**
- **If your dog has had pancreatitis, control his food intake, level of dietary fat, and potential access to garbage or forbidden foods to prevent another attack.**
- **If your diabetic dog's blood sugar levels are not too extreme, consider trying to control his diabetes with diet and complementary therapies.**

pancreatic cells themselves, so these enzymes are synthesized and stored until needed within the cells as protectively coated zymogen granules.

Enzymatic secretions from the acinar cell clusters pass through ducts lined with cells (centroacinar cells) that produce a watery secretion rich in sodium bicarbonate; pancreatic secretions thus have a basic pH to neutralize the highly acidic secretions of the stomach. And since both the pancreatic secretions and the bile from the liver empty into the upper portion of the small intestine, most of digestion occurs there.

The flow of pancreatic juices is stimulated by several mechanisms: the sight and smell of food, distention of the stomach, and release of partially digested foods from the stomach into the duodenum.

Each of these mechanisms stimulates the release of an appropriate enzyme, depending on the quantity and type of food

ingested. Fatty foods, for example, stimulate a different enzymatic response than do proteinaceous foods. All enzymatic response is finally regulated by a feedback mechanism that produces enzymes when food is present and halts the production when the dog's belly is empty and there is no food nearby.

## Endocrine functions

“Endocrine” glands do not have ducts, but release their secretions directly into the bloodstream and affect the function of specific target organs. The endocrine portion of the pancreas represents a much smaller percentage of the pancreatic tissue, but it plays an important role as the origin of several hormones, insulin most notable among them.

The endocrine portion of the pancreas is arranged into discrete islands, called the islets of Langerhans. Four different cell



types make up these islands of endocrine tissue, and each produces a different hormone:

- Beta-cells are the most numerous and produce insulin;
- Alpha-cells produce glucagons;
- D-cells (sometimes referred to as Delta-cells) produce somatostatin; and
- F or PP cells produce pancreatic polypeptide.

While these hormones have different functions, they are all involved in the control of metabolism, especially glucose metabolism. I'll discuss each hormone and its function in turn.

**Insulin** (produced by the Beta-cells) is amazingly similar between species. For example, cattle, sheep, horses, dogs, and whales differ only in the amino acids located at three sites (among a total of 21 amino acid sites) along one of the two protein chains that make up insulin. Canine insulin is similar to human insulin and identical to porcine insulin in its amino acid structure. (Feline insulin is most similar to bovine insulin.)

The function of insulin in animals is to facilitate the use of glucose, the primary source of energy from food. Its net effect is to lower blood concentrations of glucose, fatty acids, and amino acids, and to promote intracellular conversion of these compounds to their storage forms (i.e., glycogen from glucose, triglycerides from fatty acids, and protein from amino acids). The presence of insulin is critical to the movement of glucose through the cell's outer membrane into the cell.

Insulin has many target organs and it affects nearly all cell types throughout the body, with the liver being an especially important target organ. Glycogen is a storage product of glucose metabolism, and insulin promotes its production in the liver, in fatty tissues, and in skeletal muscle.

Via several mechanisms, insulin promotes protein synthesis and inhibits protein degradation, thus promoting a positive nitrogen balance throughout the body. Additionally, insulin promotes the synthesis of adipose tissue (mature fat) from the fatty acids circulating in the blood.

The primary controlling factor for insulin secretion is the concentration of blood glucose; an increased concentration of

blood glucose initiates the synthesis and release of insulin by the Beta-cells of the pancreatic islets. To a lesser extent, the presence of amino acids and fatty acids in the intestinal tract also stimulates the release of insulin. In all, at least a dozen factors influence insulin secretion, ranging from the type of diet to several hormones, and these all interact by stimulating or inhibiting production to create a whole-body energy balance.

**Glucagon** (produced by the Alpha-cells of the pancreatic islets) works in harmony with insulin in the control of glucose metabolism. Its main effects are the *opposite* of insulin. An increased activity of glucagon results in an increase of glucose in the blood.

**Somatostatin** is produced by the D-cells of the pancreatic islets *and* by areas of the gastrointestinal tract and parts of the brain. Somatostatin is an inhibitory hormone, and its main functions in the pancreas are to inhibit the secretion of insulin, glucagon, and pancreatic polypeptide. (In the gastrointestinal tract it decreases nutritive absorption and digestion and diminishes normal gut motility and secretory activity. In the brain it inhibits the secretion of growth hormone.)

A protein meal stimulates the production of **pancreatic polypeptide**, which is produced by the F cells of the pancreas. Pancreatic polypeptide inhibits the secretion of other pancreatic enzymes and increases the motility of the gut and the speed of gastric emptying.

In a healthy pancreas, the pancreatic hormones work together to maintain a harmonic and functional balance.

## Pancreatic problems

The disease that results from pancreatic problems depends on what part of the pancreas is not working properly. First, let's look at dysfunction arising from the exocrine pancreas.

### ■ PANCREATITIS

Acute pancreatitis (inflammation of the pancreas) more commonly affects middle-aged to older dogs, obese dogs, and female dogs. The cause of pancreatitis is not often known, but localized trauma or the ingestion of a fatty meal are often implicated. The disease may be mild to severe. Complications may arise when the stored digestive enzymes (zymogens) are released into the pancreatic and surrounding tissues where they can cause an inflammatory reaction, and in severe cases they may begin to digest the dog's own tissues.

Signs are often nonspecific and vary depending on the severity of the disease. A dog with mild pancreatitis may simply appear to have a "belly ache," and mope around and lose her appetite for a day or two. More severe cases may include a sudden onset of vomiting, loss of appetite, depression, fever, abdominal discomfort, and dehydration. Symptoms may be severe enough to lead to shock and collapse.

Diagnosis is not always easy due to the nonspecific symptoms, but blood tests may be helpful. Serum amylase and lipase or the newer pancreatic lipase immunoreactivity (PLI) or pancreatic trypsin-like immunoreactivity (TLI) tests may be most useful. Radiographs, ultrasound, and CT scans may also be helpful.

Pancreatitis frequently recurs in those critters I refer to as "garbage hounds" – dogs who love to get into the household garbage pails and wolf down forbidden foods with glee. The tendency is for each bout of pancreatitis to be more severe than the one before; the theory is that these recurrences of acute pancreatitis – due to the repeated inflammation, immune response, and tissue necrosis and scarring they create – eventually lead to an increased risk for developing diabetes mellitus.

Treatment is generally nonspecific, varying with the severity of symptoms. A severe case of pancreatitis – intense vomiting, pain, etc. – is a medical emergency: See your vet as soon as possible. Pain control may be necessary, and intravenous fluids may be indicated in cases where shock is a possibility.

After a course of the disease, the pancreas should be rested by restricting food and water for 4 to 5 days. Particularly fatty foods should be severely reduced in the diet, and measures should be instituted to avoid the onset of diabetes: prevent obesity, plenty of exercise, and maintain a nonstressful, dog-friendly environment. The dog's long-term prognosis may not be good, depending on the severity of the lesions suffered by the pancreas.

### ■ EXOCRINE PANCREATIC INSUFFICIENCY

Exocrine pancreatic insufficiency (EPI) is caused by a deficiency of pancreatic digestive enzymes that eventually results in malnourishment. In dogs it appears most commonly in German Shepherds. Affected animals typically lose weight even though they have a ravenous appetite (these animals will often eat anything they can get their mouths around). They typically pass large volumes of semi-formed, greasy fe-

ces (since dietary fats are not being digested).

Fecal examination will often confirm the problem; your vet can check for undigested food particles and the presence of enzymes in the feces. Most dogs respond favorably when commercially available pancreatic enzyme supplements are added to the diet. However, since pancreatic tissue doesn't regenerate, treatment will generally be lifelong.

#### ■ PANCREATIC TUMORS

The most frequent pancreatic tumor is an islet cell carcinoma (insulinoma) derived from the insulin secreting Beta-cells. These tumors generally are found in dogs 5 to 12 years old; they are frequently hormonally active and secrete excessive amounts of insulin, causing hypoglycemia.

The resulting symptoms are those associated with low blood sugar, including muscular twitching and weakness, exercise fatigue, mental confusion, changes of temperament, and occasionally seizures. The symptoms often come and go, but they typically become worse and more frequent as the disease progresses.

Symptoms are easily confused with other primary neurological diseases such as epilepsy or brain tumors. Dogs with insulinomas typically have abnormally low ( $\leq 60$  mg/dL) fasting blood glucose. Some veterinarians recommend that any older dog with neurological signs should have his blood glucose monitored.

Cancers of the exocrine pancreas are rare, but when they do occur, they can be aggressive and invasive.

### Diabetes: The problem of the endocrine pancreas

Diabetes is a general term referring to disorders characterized by extreme thirst (polydipsia) and excessive urine excretion (polyuria).

The "diabetes" that most of us are familiar with is diabetes mellitus, which comes in several forms (including Type I, Type II, and Type III), all of which involve a relative or absolute insulin insufficiency. Since it is a condition of the pancreas, diabetes mellitus will be discussed here.

Much of the endocrine function of the pancreas is devoted to the production of insulin; 60 to 70 percent of the islet cell population are insulin-secreting Beta-cells. Insulin is the key factor in the metabolism of

glucose (the energy-creating end-product of carbohydrate digestion), but insulin is also involved in the metabolic pathways of fats and proteins.

Glucose does not readily penetrate into cells (except for a few tissues such as the brain, liver, and blood cells); as stated earlier, insulin is critical for the movement of glucose through cell membranes into the cells. The net effects of insulin are to lower blood concentrations of glucose, fatty acids, and amino acids, and to promote intracellular conversion of these compounds to their storage forms (i.e., glycogen from glucose, triglycerides from fatty acids, and protein from amino acids).

The most important factor in the control of insulin secretion is the concentration of blood glucose; it is a positive feedback system in which increased concentrations of glucose (after a meal, for example) lead to increased secretion of insulin.

Diabetes mellitus is an insulin-deficient condition where there is either not enough insulin produced for the amount of glucose in the blood, or where the insulin that is produced is not functionally normal and thus is not able to produce the required cellular reactions.

Some breeds – notably Keeshonds, Puli, Miniature Pinschers, and Cairn Terriers – seem to have a genetic predisposition to diabetes, and some, including Poodles, Dachshunds, Miniature Schnauzers, and Beagles, have an increased potential for developing the disease.

■ **Symptoms:** As mentioned earlier, dogs with diabetes are forever thirsty, and as a consequence they urinate frequently.

The urine from dogs with diabetes mellitus animals will contain glucose. When the blood glucose levels exceed about 180 mg/dL, glucose begins to spill over into the urine, where it can be detected by urine dip

#### DIABETES INSIPIDUS

Diabetes insipidus has nothing to do with blood sugar, insulin, or the pancreas. The only characteristic it shares with diabetes mellitus is that its victims experience extreme thirst and urination. In diabetes insipidus, this is due to the lack of antidiuretic hormone (ADH), which normally limits the amount of urine made, or by a failure of the kidneys to respond to ADH. Diabetes insipidus is treated with drugs that reduce the amount of urine made and/or help the kidneys respond to the ADH that is present.

sticks – or the good old taste test. If we were living in past centuries, we would simply dip our finger in the urine and taste it; today we have urine dipsticks that measure glucose content. Ancient practitioners also noted that bees were attracted to the urine from animals with diabetes mellitus.

Diabetes mellitus is a chronic and insidious disease. Although dogs are hungry and eat a lot, they lose weight and gradually become weaker. Muscle mass will gradually deteriorate, and the animal will not want to exercise.

The abnormal utilization of fat for energy may lead to an overproduction of ketones. Affected animals will often have the typical diabetic "fruity-sweet" smell of ketones. Note that only some people have the scent receptors that give them the ability to smell ketones; for others (I am one of the others) ketones are a "non-aroma." Ketoacidosis is a severe overproduction of ketones and may cause disorientation, lethargy, and ultimately collapse. Test strips are available to detect the presence of ketones in the urine.

Many diabetic dogs develop cataracts, and the whitening of the eyes may be the first overt sign the caretaker notices.

Affected animals also become more susceptible to recurrent infections; cystitis, bronchitis, and skin problems are common, perhaps due to decreased neutrophil function associated with the excess of sugar in the blood. The liver, due to increased mobilization of body fats, may enlarge, and its function will be impaired by the fatty accumulations.

Human diabetic patients commonly incur retinitis and/or blood vascular conditions that may ultimately lead to limb amputations, but fortunately these two conditions are not common in diabetic dogs.

■ **Diagnosis:** Diagnosing diabetes mellitus is based on persistent fasting hyperglycemia (blood glucose levels higher than normal) and glycosuria (the presence of glucose in the urine). The normal fasting value for blood glucose in dogs (and cats) is 75-120 mg/dL. Some animals may have a transiently high blood glucose level as a result of stress (especially cats), and some drugs (glucocorticoids and others) may elevate blood glucose levels.

There are two additional tests that may be helpful in diagnosis: serum glycosylated hemoglobin and

## Types of Diabetes and the Need for Insulin in Diabetic Dogs

In humans there are fairly distinct types of diabetes. The most common are Type I diabetes (insulin-dependent diabetes mellitus or IDDM), and Type II diabetes (non-insulin-dependent diabetes mellitus or NIDDM). A third type, latent autoimmune diabetes of adults (LADA), occurs as a slowly progressive disease that shows up in middle-aged or older people. About 90 percent of all human cases are Type II; the cases in most dogs more closely resemble the human Type I or the LADA type.

“Gestational diabetes” (frequently called Type III diabetes) affects pregnant women (about 4 percent) and other pregnant animals. Its cause is unknown, but it is likely related to the mother’s hormone changes and the interactions between the hormones of the mother and the baby that occur during pregnancy. This type of diabetes generally responds to dietary therapy, and it usually goes away after pregnancy.

Type I diabetes is the result of a lack of insulin production due to the destruction of pancreatic Beta-cells; in humans it typically occurs in younger patients; and it is not usually associated with obesity. It is not clear what causes Type I diabetes, but it is likely an autoimmune disease.

Type II diabetes is typically associated with obesity. Here, a lack of sufficient insulin is not the problem. However, problems arise because the insulin that *is* produced does not interact with its target cells properly.

Human patients with Type I diabetes will almost always require insulin injections, whereas many Type II diabetics can be treated with dietary and lifestyle changes, possibly with the addition of minimal use of injectable insulin.

Most veterinary endocrinologists think that a majority of diabetic dogs have Type I diabetes, since most show serum antibodies to insulin – the keynote of Type I in humans.

All well and good . . . except that, by definition, Type I diabetes is a due to a lack of insulin production, and this often leads the practitioner to the conclusion that *all* diabetic dogs will require insulin therapy. My experience would indicate that some diabetic dogs respond quite nicely to alternative medicines, coupled with nutritional therapies and lifestyle changes.

Since this is true, I see absolutely no reason to avoid alternative therapies at the outset of the disease. You can always go to the injectable insulin if it is needed after a few months or so.

I agree with the endocrinologists who think most dogs have something more like the LADA form, given that most are middle-aged dogs with a slow onset of the disease.



**Different types of insulin vary in their period of onset, peak of activity, and duration. Your vet will take these factors into account when prescribing a type for your dog.**

fructosamine. These tests rely on the fact that glucose binds to many proteins in the body, and the “average” amount of glucose present in the blood over a period of time can be determined by evaluating its concentration on these proteins.

Glycosylated hemoglobin measures the average amount of glucose that the hemoglobin in red blood cells (RBCs) was exposed to over their lifespan, and since canine RBCs live for about 120 days, the measurement gives us a picture of average blood glucose levels over those past 120 days. Fructosamine measures glucose amounts bound to serum albumins; values indicate the average glucose concentration over the previous 1 to 2 weeks.

For diagnostic confirmation, to judge the severity of the disease, or (more commonly) to monitor the progress of the therapy being used to control the disease, your vet may want to do a glucose-tolerance curve, which is a way to test the animal’s efficiency in

the removal of an excess of ingested glucose over a short period of time.

■ **Predisposing factors:** Surveys indicate that extensive pancreatic damage, likely from chronic pancreatitis, causes about 28 percent of canine diabetes cases. Environmental factors such as feeding of high-fat diets and allowing the animal to become obese are associated with pancreatitis and therefore are likely to play a role in the development of diabetes in dogs.

Diabetes diagnosed in a female during pregnancy or diestrus is comparable to human gestational diabetes. Interestingly, at least one (human) study has shown that secondhand smoke is related to an increased incidence of diabetes, and other studies have demonstrated that correct dietary levels of calcium and vitamin D (or exposure to adequate sunlight) may help prevent diabetes.

While there is not yet any actual published data that show overt Type II diabetes

occurs in dogs or that obesity is a risk factor for canine diabetes, an open-minded observation of the actual animals that have the disease leads me to believe that at least some dogs resemble the human Type II diabetes and that obesity is at least one of the causative factors involved in the development of the disease in dogs. (See “About Types of Diabetes in Dogs,” above.)

■ **Treatment:** Successful therapy, no matter the course chosen, will require that the dog’s caretakers be willing to undertake long-term and vigilant monitoring of blood glucose levels. They should also endeavor to thoroughly understand how both the disease and its treatments work, so they will know, by the symptoms of the dog, when to change the rate or dosage of the medicines. They must be willing to give daily insulin injections (if necessary), and be prepared to deal with a hypoglycemic crisis if it occurs from an insulin overdose.

Conventional treatment begins with a combination of weight reduction and diet (high in fiber and complex carbohydrates). Intact females should be spayed, as their blood sugar may prove more difficult to control during estrus.

If diet and weight reduction do not control the disease, injectable insulin will be necessary. There are more than 20 forms of injectable insulin available, with several made especially for dogs. Each form of insulin has a unique time of onset and duration of activity. Your vet will likely recommend the one with which she is most familiar and successful. Insulin injections may be required once or twice daily.

■ **Nonconventional therapies** for diabetes run the usual gamut of medicines, including acupuncture, homeopathy, herbal, and nutritional therapies. Life style changes will almost certainly be needed; more exercise to reduce weight and attention given to reducing stress are commonly prescribed. Therapies such as calming herbs, massage, flower essences, and aromatherapy may be indicated to reduce the dog's stress.

For the obese animal, specific nutritional supplementation should include a high fiber, weight-reducing diet. There are some commercial products available that purport to be supportive of diabetic animals. Check with your holistic veterinarian.

Niacin (vitamin B-3) plays an important role in carbohydrate metabolism, and research shows that one of its precursors, niacinamide (the substance found in most "enriched" grains), can protect pancreatic cells from diabetes-inducing factors. Biotin and vitamin B-6 are also important nutrients in carbohydrate metabolism and for helping prevent diabetic complications.

Vitamin E has been shown to reduce blood sugar levels in diabetics, and thiamine plays a huge role in the proper regulation of glucose metabolism and pancreatic Beta-cell function. Vitamin C is important for blood sugar regulation in humans and animals; supplementation with vitamin C has been shown to decrease insulin resistance

and improve glucose regulation (in mice).

Poor control of diabetes has been associated with low serum magnesium, and as already mentioned, low levels of calcium and vitamin D are associated with increased chances for developing diabetes. Zinc and selenium, too, have a proven role in preventing diabetes. Chromium, in just micro doses, appears to be very helpful for some cases of diabetes. Chromium picolonate is the biologically active form, and its action is to increase the number of cell receptors for insulin; it would thus be most helpful for Type II diabetes.

Note: In all cases of nutrient supplementation, be certain that you are providing a *balanced* level of the nutrients. Check with your holistic veterinarian to be sure.

Worldwide there have been more than 1,200 herbs that have been used to treat diabetes. Out of these, several have shown promise on animals, including: fenugreek, dandelion, garlic, cinnamon, and Madagascar periwinkle. Ask a qualified herbalist who has worked with animals for correct dosages and ways to use the herbs.

I have had success when using classical homeopathy and acupuncture with diabetic patients. Admittedly my cure rates were not as high as with other diseases, but they were high enough to justify the recommendation to try an alternative approach initially.

■ **One final caveat:** Diabetes may be the most-discussed disease on this planet – meaning the Internet is chock full of information (correct and incorrect), good and bad advice, cure-all proclamations, and downright hooey. You can learn a lot about diabetes on the Internet, but . . . buyer and user beware! 🐾

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

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# Wait a Doggone Minute

*Many readers appreciated hearing about an herbal arthritis pain reliever; others were peeved with the nature of our report on DGP.*

*Dear readers: The response to our article on Dog Gone Pain, featured in "Safe Pain Relief" (May 2006), has been heavy and swift. Quite a few of the letters we received resembled the following:*

I ordered DGP for my seven-year-old Labrador, who has had a shoulder problem for two years, and noticed improvement quickly. She sees a chiropractor and receives acupuncture, but this really seems to help her pain.

Diana Pintel, Mistypoint Labradors  
Lake Almanor, CA

*But then, we also received letters like this:*

As the owner of a senior Golden Retriever suffering from bilateral hip dysplasia and spinal arthritis, it was with great interest that I read your article on DGP. Our guy, Teddy, is clearly suffering, so we decided to ask our veterinarian about it. Our vet practices conventional, holistic, and Eastern medicine, and is very open-minded.

His answer was surprising. He said the American Veterinary Medical Association (AVMA) strongly advises against recommending *any* product with undisclosed ingredients. He further stated that because of the undisclosed ingredients, he can't guarantee there will not be negative interactions with the two medications Teddy must take, soloxine for thyroid and Enalapril for his kidneys.

As Teddy's options are limited, we will try anything to make him comfortable. Conventional medications are no longer effective, so we will cautiously try DGP, but we expected a more positive response. Perhaps it could be suggested to the manufacturer that they be more forthcoming with the ingredients so American veterinarians can be comfortable talking about and recommending this product.

Donna Zeiser  
Levittown, NY

*Thanks, Donna, for your thoughtful and caring letter. I was unaware of the veterinary community's anxiety or wariness about undisclosed ingredients until my recent correspondence with Dr. Susan Wynn (our interview appears on page 6). Dr. Wynn expressed her concern with DGP this way:*

*"As long as they keep secret their ingredients, no veterinarian will ever be able to ethically recommend the product. And while I think the stuff works, who is to say that it's not working because they added a nonsteroidal anti-inflammatory drug, the way some unscrupulous Chinese herb producers do?"*

*I'll be contacting the makers and distributors of DGP and asking them for a response to these very valid criticisms. I absolutely agree that any legitimate supplement maker should be happy to disclose all of its ingredients, especially to interested veterinarians.*

*I must say that I have only rarely heard vets express concern over the undisclosed ingredients in things like spot-on pesticides and so-called inert ingredients in the conventional drugs and topical medicines they sell and prescribe. On the other hand, though, at least those things have been tested and approved by the FDA. I could debate both sides of the issue all day; let's move on to more critiques!*

I was very taken aback by "Safe Pain Relief." I am a clinical psychologist (and dog fanatic, of course) and have extensive training in experimental design. The fact that the "experiment" designed by Jan Skadberg did not include a control group of any sort, nor utilized a double-blind design, renders the results useless, in my opinion.

The entire body of results could easily be explained by the placebo effect (in other words, the owners knew they were giving something potentially helpful to their dogs, which may have altered the owner's behavior toward their dogs, which in turn may

have affected the dogs' behavior, resulting in the findings reported). It would have been so easy to make this a double-blind study. In this way, the placebo effect, which has been proven over and over again to be very powerful, would be removed as a variable.

Beth Fishman, PhD  
El Prado, NM

I proudly own two wonderful Tibetan Terriers and am an interventional cardiologist. I have always tried to practice "evidence-based medicine." I support the NIH initiative to scientifically evaluate nontraditional medicine and have a completely open mind to the conclusions.

That said, your article on DGP was naive and ill-advised. DGP may be a wonderful remedy, but the "study" you reported was amateurish and would be laughed at by any respected scientific journal.

Alan S. Brenner, MD, FACC, FSCAI  
Elkins, NH

*For what it's worth, the article's author didn't misrepresent her methodology; it was admittedly homegrown. And she did state that her goal was simply to test the product on enough dogs to see for herself whether her own dog's experience was a fluke. If it performed well, she wanted to publicize this in hopes of inspiring more appropriate and experienced researchers to initiate a large-scale, conventionally structured study.*

*Ah, well, if you didn't like the DGP article, you're going to hate the one in this issue on Willard Water. I'm skeptical about Willard Water myself, but I can't count the number of readers who have been begging us to publish an article about it after they tried it with wondrous results.*

*As penance, Dr. Susan "Evidence-Based Medicine" Wynn has assigned me the task of writing an article for WDJ about the relative strengths and weaknesses of the various types of scientific evidence: case studies, meta analysis, in vitro testing, clinical trials, and more. I'll be in my room.*

## VISIT TO A PET FOOD FACTORY

**T**hank you for accepting our invitation to tour Natura Pet Products' California baking facility and our state-of-the-art dry food manufacturing plant in Fremont, Nebraska.

I'm pleased that you had the interest to learn about the different programs and certifications it takes to provide the best and most healthful foods for companion animals.

As you accurately pointed out in your dry foods review ("The Right Stuff," February 2006), using high quality ingredients isn't enough. A total – almost fanatical – commitment and focus to quality manufacturing processes and quality assurance programs is the only way to give pet owners the confidence they deserve when choosing a product to feed their pet. This has become magnified in light of the unfortunate recent event in our industry. [Editor's note: Atkins is referring to the death of a number of dogs in December 2005 due to poisoning from aflatoxin in some foods made by Diamond Pet Foods.]

Natura is committed to the highest standards for safety, reliability, and consistency by achieving and maintaining all of the third-party certifications that you listed: the American Institute of Baking (AIB) *Superior Rating* Certification, Organic Production Certification, USDA APHIS (Animal and Plant Health Inspection Service) Registration and the ISO 9001:2000 Compliance Certification.

By pointing out the importance of these processes and certifications, WDJ helps pet caretakers make an informed choice when choosing foods to feed their companions.

Peter Atkins  
Vice President, Natura Pet Products  
San Jose, CA



**From left to right: Natura's Peter Atkins, WDJ's Nancy Kerns, Natura's Don Scott (VP of Manufacturing), and Natura's Brian Streit, Director of Operations.**

## More "Completely Convenient" Frozen Raw Diets

We missed the opportunity to include at least two (and surely more) manufacturers of frozen, raw diets in our April 2006 article about these products.

**Oma's Pride**  
Avon, CT  
(800) 678-6627  
omaspride.com



**OMA'S PRIDE**

Oma's Pride is a division of a meat-packing company that has produced meat and poultry for restaurants for more than 50 years. The company states that the Oma's Pride products are made out of the same USDA-inspected and -approved ingredients as its parent company uses. Products include a chicken- and a turkey-based mix (each consisting of 70 percent meat/ground bones, 10 percent organ meats, and 20 percent vegetables); a beef mix (also 70 percent meat/ground bones, 10 percent organ meats, and 20 percent vegetables); and a lamb mix (80 percent meat/ground bones and 20 percent vegetables). The company also sells raw, recreational chew bones, tripe, organ mixes, and other meat products. Available via direct shipping, in some retail outlets, and from the manufacturing plant itself.

**Pepperdogz**  
Petforia, LLC  
Bellevue, WA  
(866) 866-DOGZ  
pepperdogz.com



Pepperdogz presents its frozen raw diets in 8-ounce "chubs," kind of like a little frozen log. This form and size, the company claims, best resists freezer burn and "snow," yet is easy to thaw. Three varieties are offered: "Perky Turkey," described as a low-fat alternative to chicken, contains turkey, ground turkey bones, and turkey liver and heart (all from cage-free, antibiotic-free poultry); "Kick'n Chicken" is similar, only with chicken; and "Go Go Buffalo," which utilizes range-fed buffalo as a beef alternative. All three contain vegetables, fruit, natural oils (flax seed, oil, evening primrose, and safflower), and a variety of supplements. Available from select locations in Colorado, New Mexico, Oregon, and Washington, and online from Only Natural Pet Store (onlynaturalpet.com).

## CORRECTIONS

"Completely Convenient," in the April 2006 issue, contained some errors.

The home office of **BARFWorld, Inc.**, is now located in Danville, CA. Also, we stated that Dr. Ian Billinghurst is no longer connected to BARFWorld, Inc. In fact, Dr. Billinghurst is still a shareholder in the company. However, since April 2003, he is not on the Board of Directors of the company and has not been involved in its day-to-day operations.

We incorrectly reported that the vitamin/mineral component of the raw, frozen diets made and sold by **Nature's Menu**, of Lake Geneva, WI, is sold separately. This is incorrect. Nature's Menu's diets do contain a vitamin/mineral supplement and are formulated to be "complete and balanced." We regret the errors.

## GIARDIA ADDENDUM

We have some additional information about "A Water-Lover's Worry" (May 2006). First, regarding when to recheck a dog's stool after treating her for a *Giardia* infection: We reported that parasitologists advocate retesting the dog three to four weeks after treatment ends, and the practicing veterinarians we consulted observed that guideline. But we've since learned that researchers are now urging veterinarians to follow treatment with another *Giardia* test no more than 7 days later. Dr. Andrew Peregrine, Associate Professor of Clinical Parasitology at the Ontario Veterinary College, University of Guelph, explains that, if results are positive, waiting longer than this makes it difficult to know whether the drug failed or the dog got reinfected.

Also, we've learned of another method of testing that deserves mention. The SNAP *Giardia*® Test is similar to an ELISA test, but has the advantage of being done in your veterinarian's clinic. It appears to be more reliable than a float test or fecal smear; however, the jury's still out on whether it's as effective as an in-lab ELISA. It's been available in the U.S. since 2004, and just became available in Canada.



## RESOURCES

### BOOKS

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

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

*Ruffing It: A Complete Guide to Camping With Dogs* by Mardi Richmond (Alpine Pubs, 1998), is also available from DogWise, (800) 776-2665 or dogwise.com

*The Encyclopedia of Natural Pet Care* and *Natural Remedies for Dogs and Cats*, by WDJ contributor CJ Puotinen, are available from DogWise, (800) 776-2665 or dogwise.com. 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

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### WILLARD WATER

Nutrition Coalition, Fargo, ND. (800) 447-4793 or (218) 236-9783; willardswater.com

*Holistic Guide for a Healthy Dog* by Wendy Volhard and Kerry Brown, DVM. Howell Book House, 2<sup>nd</sup> Edition, 2000

Roger DeHaan, DVM, Kings Mountain, NC. aholisticvet.com

### TRAINING AND INSTRUCTION

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

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

Please note: APDT is dedicated to building better trainers through education, promoting dog-friendly methods, and encouraging their use. 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.

## WHAT'S AHEAD

### Herbal Detox

Greg Tilford explains the mechanisms of detoxification, and what herbs are safe to give your dog for this purpose.

### Roll On Past This Technique

Why no one should ever attempt the infamous "Alpha Roll" maneuver with his or her dog.

### Anatomy of a Fat Dog

If this doesn't scare you into putting your dog on a diet, nothing will!

### A Real Treat

How to identify and select healthy and irresistible treats.

### When Mom and Dad Don't Agree About the Dog

Doesn't this title say it all? Pat Miller talks about the differences between the way men and women typically train the family dog – and how they can all get along anyway.

### Thanks to Juliette

An interview with Juliette de Baracli Levy, author of *The Complete Herbal Handbook for Dogs and Cats*, and the earliest proponent of a natural diet for dogs.