

REPORT

Pet Food: The Inside Scoop



Chances are you're feeding your cat or dog "pet food" you bought at the grocery, veterinarian's office, feed or pet store. It comes in a can, a bag or a box, and on the label somewhere it says, "complete and balanced nutrition." You pour it in the bowl thinking it is what your animal is supposed to eat. Generations of cats and dogs have been raised on "pet food." No problem, right? But then why does your five-year-old dog have arthritis? Why has your cat been to the vet three times this month? Maybe it's time to question whether your idea of "complete and balanced nutrition" is the same as whoever put those words on the label.

The American Association of Feed Control Officers (AAFCO) is responsible for the words "complete and balanced nutrition" on commercial pet food. AAFCO is an organization made up of people who work for state agriculture departments and the Food and Drug Administration (FDA), with input from people in front groups for industry such as The Pet Food Institute, the National Cattlemen's Beef Association and the National Renderers' Association. AAFCO is concerned with issues involving animal feed, and it advises the FDA

and USDA on such matters. But it has no regulatory authority itself, it does not test pet food, and it does not issue any kind of certificate that a pet food is "complete and balanced." When that statement goes on the label, the company making the food is solely responsible for it being there. AAFCO doesn't verify.

AAFCO publishes minimum standards for "complete and balanced nutrition." But serious questions have recently been raised about those standards which may have more to do with making pet food profitable than making pets healthy. AAFCO makes no secret of the fact that it wants to cooperate with, not regulate, members of the pet food industry—an industry made up of rendering plants; manufacturers of vitamin premixes and flavorings; and multinational corporations.

Commercial pet food (pet food sold in supermarkets, pet stores, feed stores and veterinary offices in bags or cans) is a mixture of rendered (cooked) animals including road kill, unwanted animal parts such as diseased organs from slaughter houses, chicken feet, beaks, feathers and excrement. It is blended with a vitamin mix, doused with flavoring and coloring to mask the gray color, put into a bag, box or can, labeled and sold. Except for brands that use "human-grade" meat, all commercial pet food is, literally, garbage that nobody wants. If something that resembles human food gets into commercial pet food (excluding "human-grade" pet food), it happens accidentally. Some argue that cats and dogs do not need to eat filet mignon. That's true, but here is the problem.

Millions of animals and their owners are relying on the promise that commercial pet food is "complete nutrition." Some manufacturers even go so far as to warn people not to feed their animal(s) genuine food—only their products—as if it would be dangerous to feed little Fluffy meat and vegetables. That would suggest that pet food provides something unique and special. A glimpse behind the scenes, however, reveals that there is little science behind commercial pet food.

A good look at "complete and balanced"

It is widely accepted in the scientific community that the definition of "complete and balanced" nutrition for dogs and cats is unknown. There is a general idea of what it takes to keep most cats and dogs from developing deficiency diseases such as rickets, but the idea that a bag or a can provides "complete and balanced nutrition" for your dog or your cat is not scientifically supported. The nutritional requirements for an animal depend on its age, its breed, its condition and its environment. What works for a labrador retriever may not be right for a greyhound. Two cats put on the same commercial cat food may respond very differently. One may develop an enlarged heart from a lack of taurine, the other may not.

Researchers do not even agree how to verify "adequate" nutrition. Is adequate nutrition what will enable an animal to maintain its weight over a period of a few weeks? A few years? Is adequate nutrition what it takes to keep an animal from developing obvious deficiency diseases, such as soft bones? Or is it what it takes to keep a dog or cat from developing skin disorders, cataracts or cognitive dysfunction over the long haul? Currently, the most basic standards-like amino acid requirements-are being challenged. Things like antioxidants, methylation enhancers, mineral balance-these supplements aren't even on the map yet.



So how is it that a manufacturer can claim "complete and balance?" What are the criteria? One way a manufacturer can prove that its dog food is "complete and balanced" is to feed the product to eight dogs for six months. If six of the eight dogs make it through the study without dying of a nutritional disease or losing more than 15% of their body weight, the food is "complete and balanced."



Who created these standards? The pet food industry, working through AAFCO. And while they appear to be similar to those set by the National Research Council (NRC)-the organization that sets RDAs for humans-they are not. AAFCO standards set minimal nutritional requirements-not recommended daily allowances, AAFCO standards do not meet NRC standards which are based on 100% bioavailable, purified food. Pet food is neither, yet AAFCO requirements use the same figures in most cases. A report in the Journal of Nutrition skewers the AAFCO claim of complete and balanced nutrition. "Until the AAFCO allowances are adequately referenced citing experimental data, they lack scientific veracity. Although the pet food industry has been given a set of tables to use to make a nutritional claim on the label, the claim lacks integrity and will remain so until measured bioavailability values are included in the calculation of nutrients allowances."

Bioavailability is a crucial issue. Bioavailability is how much of the food can actually be utilized by an animal for critical functions like the growth of cells. A bowl of chicken feet does not provide the same nutrition as a bowl of chicken thighs. The "meat" part of commercial pet food is whatever decomposing slaughter house refuse and dead animals the rendering plant took in that day. It could be a lot of chicken feet or a few chicken feathers-not even the company that makes it can tell you what's in a can, box or bag of commercial dog or cat food.

FDA regulation of pet food

While the Food and Drug Administration can't tell you what's in a can or bag of pet food, it can tell you that it regulates it. But the public record doesn't support that claim very well. The number of times the agency has pulled pet food off the shelves to protect animals since 1997 averages out to about once a year, and those cases involved violations so blatant the FDA had to act-dioxin in over two million pounds of pet food vitamin premix; metal fragments in puppy food; aflatoxin in a million bags of corn-based dog foods (various brands using the same corn source.) These recalls are a miniscule fraction of the hundreds of millions of pounds of pet food sold in the market. What about the rest of it? Warning letters from the FDA go out when it learns of manufacturing violations such as the wrong drug gets put into thousands of capsules or an HIV-infected knee cap enters the market. Labeling violations also provoke warning letters. The list of warning letters to pet food manufacturers since 1997 is very short. There are none.



lams/Eukanuba

There is, however, a series of letters to lams, a pet food company, that look a lot like warning letters, but aren't according to the FDA. Whatever they are, they reveal much about commercial pet food.

The letters were sent to lams regarding lams/Eukanuba dog food. Neither the FDA nor Procter & Gamble, which now owns lams/Eukanuba, want the public to see them. Motions have been filed in lawsuits to keep them secret, and they are not available on the FDA website. However, redacted copies we obtained under the Freedom of Information Act show that lams and Eukanuba's dog foods did not meet AAFCO standards even though the AAFCO stamp of approval appeared on the label.

The FDA sent the letters after being notified by Nutro, another pet food company, that feeding studies commissioned by Nutro on lams/Eukanuba had to be stopped because dogs couldn't maintain their weight on the products. Maintaining weight is a critical issue for AAFCO-approved pet food. It's the only way to determine whether an animal is getting enough nutrients under current AAFCO testing guidelines. If the animal cannot maintain its weight on the prescribed amount of food the animal is not only getting insufficient calories, it's getting insufficient vitamins, minerals and protein as well. lams tried to argue that its purpose for failing to meet AAFCO minimum standards was its concern over pet obesity-dogs are too fat. The company did not explain why it didn't increase the nutrients to make up for the caloric loss, nor indicate on the label that lams is a diet food. The company also changed the numbers on the nutrient equations, and tried various other explanations as to why its food didn't meet minimal standards, but

the FDA shot them down as "disingenuous."

READ THE LABEL

The first ingredient in quality pet food is meat. High-quality protein is crucial for the health of dogs and cats. Cats are strict carnivores and must have meat protein in their diet. Therefore, meat is a crucial ingredient in any cat food. Dogs are omnivores, able to utilize both animal and plant proteins. Chicken, beef, turkey or other meat listed as the first or only ingredient indicates that the food is the highest quality commercial pet food you can buy. Meat by-products is the next grade down. By-products are things the slaughter house doesn't want-like chicken heads, brains, blood, lungs, bone or diseased livers. The word "meal" or "hydrolyzed" indicates that the food is bottom-of-the-barrel. This "meat" is from rendering plants, which take in road-kill, euthanized animals and other refuse.

Propylene glycol, ethoxyquin, BHT, colorings and flavorings are potentially toxic when ingested repeatedly. "Corn gluten meal" appears in some pet foods. It conjures up visions of fresh corn. In reality, it's what's left of a corn kernel after all the good part is taken out. These and other "grains", such as "brewer's rice," are virtually devoid of nutrition.

Information on homemade pet food can be found in Food Pets Die For; Let's Cook for Our Cat

So why didn't the food meet AAFCO standards? Probably money. When Procter & Gamble bought Iams and Eukanuba, it changed the formula of the dog foods to a cheaper recipe. Out went the meat, in went "by-product meal" (rendering plant product). Sorghum (cattle feed) and barley replaced rice. Feeding amounts were reduced 25%. When the dust cleared, these "premium" foods could compete price-wise with grocery store dog food. In fact, they were grocery store pet food with fancy labels. This is what got the ire of Nutro and Kal Kan, both of which have lawsuits against P&G's Iams/Eukanuba for false advertising and misleading labeling. A class-action suit on behalf of consumers has just been settled by the California firm of Wasserman, Comden, Casselman & Pearson. The other lawsuits are still pending.

AAFCO approves pet food, but it doesn't regulate it. What about the Food and Drug? What is the FDA doing to regulate pet food? One thing it is spending a lot of time on is a joint effort with the AAFCO to create an "enforcement event" targeting dietary supplements-vitamins, herbs, antioxidants. The first "target" was rumored to be glucosamine-a proven supplement for arthritis. That target was abandoned when veterinarians and others voiced major objections. New targets are planned, including MSM and garlic. "Investigators" have been appointed, and "surveillance" has been set up. An FDA/AAFCO coalition believes that launching a war against these kinds of "unapproved" supplements and additives in pet foods will protect the health of cats and dogs. They want to keep dangerous supplements out of pet food, but meanwhile, what's being kept in pet food?

Anesthetic in commercial pet food

One additive that neither the FDA nor the AAFCO appears to be worried about is pentobarbital, an anesthetic commonly used by veterinarians to euthanize cats and dogs. The FDA has been receiving complaints from veterinarians that cats and dogs they are attempting to euthanize have developed a tolerance to the drug-it's taking more of the drug than it should to achieve euthanasia. How could animals that had never had the drug before suddenly have tolerance to it? The most logical explanation, according to the FDA, is that they're ingesting it through commercial pet food.

Although commercial pet food manufacturers deny it, it is widely reported that euthanized cats and dogs are sent to rendering plants and made into cat and dog food. In 1997, the FDA undertook a study to determine the level of pentobarbital in commercial dry dog food and whether or not cat and dog DNA is found in such dog food. It did not find cat/dog DNA. (Another study is currently underway using different methodology that will address the same issue.)

However, the agency did find what are apparently toxic levels of pentobarbital in some food. As of this writing, the agency has not released the data from the study, (only a brief synopsis) but the agency estimates that dogs could consume up to 4 mcg of the anesthesia a day per kilogram of the dog's weight in dry dog food. An 80 pound dog could, then, get about 160 mcg of pentobarbital a day. Fifty mcg of pentobarbital per day is the limit at which the researchers did not see any effects in the eight-week FDA study. Despite finding what appears to be toxic levels of pentobarbital in dog food, the FDA states that health effects are "unlikely."



We asked Dr. William J. Burkholder if the FDA has found out what is causing the pentobarbital tolerance problem- the problem that prompted the FDA study in the first place. Burkholder is a "pet food specialist" at the FDA and a member of the "pet food committee" of AAFCO. He told us that the agency hadn't found what's causing the problem. When asked if more studies were going to be done, he replied, "no."

Keep them healthy

Commercial pet food is the fast food of the animal world. It's quick, it's easy, but is it really cheap? How much of what walks into a veterinarian's office is the result of poor nutrition? How many chronic diseases are caused by chronic nutritional deficiencies that accumulate over years? We can't answer those questions, but we suspect that many vet bills are traceable to poor nutrition.

Issues beyond whether an animal can simply maintain its weight or avoid an obvious vitamin deficiency are not addressed by "complete and balanced" pet food. Protection of vital organs with antioxidants and amino acids, immune enhancement, longevity and the prevention of cancer are best achieved for our "best friends" by a high-quality diet and scientifically-proven supplements.

For example, studies have shown that if an animal is given vitamin E and other antioxidants before it undergoes physical trauma, it is more likely to survive. Likewise, if a cat or dog gets high levels of taurine and L-carnitine in its diet, it is less likely to get an enlarged heart (cardiomyopathy). The same amino acids given as supplements can also reverse heart conditions if they do occur. Probiotics can potentially protect dogs and cats from killer bacteria like salmonella, and provide a good source of B vitamins. And although cats can't convert beta-carotene to vitamin A, they can use it to enhance their immune systems. These are only some of the ways our "best friends" can benefit from the same high-quality nutrients that protect us.

Jack the cat was living the good life in Hollywood and seemed to have the world by the tail until the day he couldn't move and stopped eating. His alarmed owner rushed him to the veterinarian where he was told that Jack had serious kidney problems and nothing much could be done. No reason could be identified Jack's condition at six-years-old, young for a cat which can live 20 to 30 years. Jack's owner refused to give up, however, and took his faithful friend to another vet for a second opinion. The second vet was trained in both traditional and alternative veterinary medicine.

When Jack landed on the examining table, he was anorexic and anemic. About half his body mass had disappeared. The laboratory test results were grim. Jack's creatinine and BUN (blood urea nitrogen) were ten-times normal. An ultrasound showed bloated, water-logged kidneys. The veterinarian didn't have much hope, but offered to do surgery to clear any potential blockage and get a better grip on the situation. Jack's owner agreed, and a biopsy was taken during the procedure.

Continued on Page 2 of 2



[Back to the Magazine Forum](#)

REPORT

Life Extension Animals Case Studies

By Terri Mitchell

It was five long days until the results came back. By then, Jack was barely hanging on. The report showed that Jack's kidneys were inflamed for no apparent reason. Little grains created by the immune system were filling up his kidneys, blocking the delicate filtering system. Something was needed that could counteract the inflammatory process. The vet decided that Jack needed an intensive program starting with N-acetylcysteine (NAC).

NAC is a form of the amino acid, cysteine, with multiple kidney-protective actions. The research on what NAC can do for the kidney (and the liver) is scientifically well-documented. In one recent study, researchers in Italy demonstrated that NAC normalizes creatinine levels in rodents with kidney failure. It reverses inflammation and restores filtration. Similar findings are reported by French researchers when NAC is given as a pretreatment before experimental kidney damage in rats. Without NAC, there is a 68% reduction in the ability of the kidneys to do their job. With it, the loss of kidney function is only 29%. A third study confirms that an infusion of NAC before and after experimental kidney damage doubles the kidney filtration rate. NAC is strong medicine for the kidneys. It has no adverse side effects, even when small animals like cats are given a human dose.

The veterinarian started Jack on 100 mg of NAC twice a day, plus a new diet of raw beef and chicken and 100 mg of DHEA (dehydroepiandrosterone). DHEA is critical for an important kidney enzyme known as sulfotransferase. People with kidney disease have depleted levels of DHEA. Research shows that DHEA and NAC probably work synergistically, which is why they were given together.

Within 24 hours of receiving NAC and DHEA, Jack began eating like a normal cat. He continued to vomit for several days (a side effect of kidney failure), but two weeks from the date of surgery, his BUN had dropped from 152mg/dl to 45.6mg/dl and he was up and around. At that point, the supplements were cut in half. A month later, Jack's blood tests were normal. That was over a year ago and Jack is still doing great. He is maintained on a high-protein diet along with 50 mg of NAC and 25 mg of DHEA a day.

Zoe, the hairless dog

Zoe was beginning to look more like a chihuahua than a Yorkshire terrier. The little dog belonging to Lynne and Frank Burger scratched at her back constantly, but nothing they did seemed to help. She was going bald. And not only that, she never wanted to play with her buddy, "Mr. Pug," anymore. She seemed to have nervous energy but no real energy. Smallest in a household of ten dogs, Zoe had a special treat added to her dry food: a "gourmet" food from the grocery store.

"Flea allergy" or "food allergy" is a common diagnosis for animals losing their hair. It's a quick, eye-ball diagnosis rarely accompanied by laboratory tests. The cure is usually steroids plus one of the new pesticides that is put on the back of the animal and absorbed through the skin. The problem is that fleas are only one of many things that can cause hair loss, which is usually accompanied by some sort of skin disorder.

Researchers from Hungary recently reported that 17 dogs treated with pesticides, "restricted diets," steroids, antibiotics and other medications did not respond because they were infected with microorganisms that are not usually regarded as a problem. Yet when the bugs were eradicated with the proper drugs, the dogs got well. This points out the importance of finding the root cause of a persistent problem.

Another cause of hair loss is poor nutrition. There is considerable evidence that the nutritional requirements for dogs depends on the breed. It appears that dogs prone to certain disorders also require certain dietary needs. English setters, for example, can inherit a terrible disease called Batten disease which causes the brain to shrink. It is accompanied by abnormally low levels of polyunsaturated fatty acids and the amino acid, carnitine. Researchers at Indiana University wanted to see if it would help to

The dog with arthritis

Gigi was limping when caretakers, Bill and Charlene Baird, took her to the vet. She was also losing her hair. After examining the little terrier mix,



the vet gave his diagnosis: arthritis. Gigi was only five, but already she was getting the signs of old age. The veterinarian recommended a new diet and some products he was selling, but Bill and Charlene opted to try Life Extension products. Bill was a fan, having been able to throw out half of his heart medications after switching to heart-enhancing supplements from Life Extension. They immediately put Gigi on Life Extension Dog Mix (two scoops), MSM (500 mg/day) and glucosamine/chondroitin (900 mg/day).

Within a week, Gigi stopped limping, and Bill no longer had to help her into the car. "She's doing great," said Charlene. "She plays tug-of-war, chases balls, constantly wants to play and runs circles around the rocking chairs." The limping is long-gone, the hair-loss has stopped and Gigi hasn't been back to the vet since.

supplement the animals diets' with carnitine, fish and corn oil. It did. Carnitine greatly reduced cognitive decline, and the combination reduced brain atrophy and extended lifespan 10%.

In 1988, veterinarians at the University of California at Davis reported on 13 dogs that had been eating a generic dry, corn and wheat-based dog food. The dogs were depressed and lethargic. They had swollen lymph nodes and, worst of all, they had scaly, crusting areas where their fur was falling out. The dog food the owners were feeding did not state that it met minimum nutritional requirements (AAFCO). When the animals were put on a higher-quality dog food, the animals began to get better within days.



THE DIABETIC WEIMAREINER

A Weimareiner in Florida is living proof of what a supplement known as lipoic acid can do for blood sugar.

Harley was adopted out of a shelter when he was a puppy. Everything seemed fine until the day the dog passed out. His worried owners, Mimi and Jesse McClellan, soon learned that Harley had diabetes. His blood sugar was so high that he had to be given 30 mg of insulin twice a day. His diet was changed in the hopes he might do better. But despite changing from a rice-and-lamb dog food from the grocery to a higher-grade dry food product, Harley's symptoms did not improve. His blood sugar was on a roller-coaster ride, soaring then falling. His frustrated owners had to come home at lunch to feed him. Things were not looking good for Harley.

By chance, Mimi McClelland met a person familiar with Life Extension products. She recommended that Harley be put on Life Extension Dog Mix (3 scoops), lipoic acid (500 mg/day), L-carnitine (1500 mg/day) and DHEA (100 mg). Mimi immediately agreed to try the supplements on Harley. Within days of getting them, Harley was bouncing around, wanting to play. It was the first time in months Harley had "acted like a dog." His blood sugar dropped from 300 to 130.

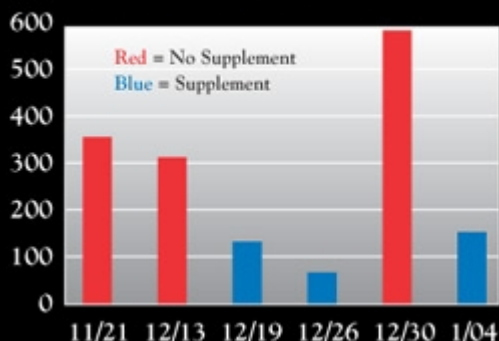
However, two weeks later, Harley's blood sugar again soared when his owners were away. This time, Mimi added the new, high-protein, low-carbohydrate diet to the supplements (Wysong All-Meat, cottage cheese, whole cooked oats and vegetables). Within days, Harley stabilized and his blood sugar dropped, and he stopped carrying his food bowl

around. To date, he has been doing great, "He's on top of the world. Today we played Frisbee," says Mimi.

Lipoic acid is a powerful antioxidant. In Germany it is prescribed as a drug to people with diabetes. Here in the U.S., it's available as a supplement. One of its actions is to alleviate neuropathy, a painful degeneration of nerves caused by free radical damage. Researchers in Scotland have documented the extraordinary ability of lipoic acid to keep diabetic nerves working properly. It enhances "nerve conduction velocity" and blood flow, and reverses blood vessel constriction. In another report, researchers found that lipoic acid actually restores critical nerve factors that are lost in diabetes.

Another important action of lipoic acid is that it lowers blood sugar by stimulating glucose uptake, lowering production, and enhancing sensitivity to insulin. It works much better when it's injected, but oral lipoic acid can drop blood sugar as well. Under laboratory conditions, it can drop the blood sugar of rodents by as much as 30%. In Harley's case, the lipoic acid supplement was used in combination with L-carnitine, Life Extension Mix, DHEA and a high-protein, human-grade diet. His blood sugar dropped about 70%.

HARLEY'S BLOOD SUGAR



One of the benefits of lowering blood sugar is that it reduces the risk of heart attack. Researchers at the University of Iowa have shown that when lipoic acid is added to cells from the aorta, it prevents the activation of NFkB, an inflammatory factor that makes blood cells stick together. This research was confirmed in other studies where lipoic acid supplementation reduced similar blood factors that promote heart attacks.

Elderly dogs can act like elderly people who aren't quite "with it." The "not with it" part is caused by damage to brain cells-damage that accumulates over time. A small percentage of dogs can go on to develop an Alzheimer's-like condition. (Although under the microscope, doggie AD does not have all of the same features as human AD.) Symptoms of brain aging in dogs include sleep disorders, forgetting house-training, lethargy, disinterest, confusion about going in or out of doors, hiding and getting lost.

There are various supplements an owner can give their animals to protect them from degenerative diseases. DHEA (dehydroepiandrosterone), for example, is a hormone secreted by the adrenal glands that declines drastically with age. In a study from Purdue University, 100 mg/kg of DHEA a day given as a supplement for seven months to elderly dogs reduced the percentage of brain cells with extensive DNA damage by 42%. This shows that even an elderly animal can benefit from anti-aging interventions. In the same study, damage to the dogs' immune cells was cut in half. This is good health news for pet owners. Note that both types of cells (immune and brain) are extensively damaged in people with Alzheimer's disease. Its antioxidant action may account for DHEA's ability to protect these vital cells.

There are other methods to protect the brain as well. When the Science Diet® people went looking for a supplement that could help aging dogs stay alert, they focused on two important aspects of brain aging: energy and free radical damage.

The brain's energy is generated by sub-cellular structures called "mitochondria." When mitochondria make energy, free radicals are created. Free radicals, in turn, damage mitochondrial DNA. Damaged DNA, in turn, prevents the little power plants from producing energy efficiently. The vicious cycle is accelerated by age.

The brain is very susceptible to free radical damage because of its high fat content and high demand for energy. One of the most powerful brain antioxidants is alpha lipoic acid, also known as lipoic, or thiocetic acid. Lipoic acid has multiple actions. On one level, it restores and maintains other antioxidants including vitamins C and E, and the natural antioxidant, glutathione, which is diminished in the brains of elderly dogs. Lipoic acid also enhances the level of coenzyme Q10, an energy-related enzyme, and restores arachidonic acid in brain cells to youthful levels. Arachidonic acid is absolutely critical for learning and remembering. Researchers have demonstrated that restoring arachidonic acid to youthful levels through supplements increases the ability of neurons to respond. In other words, arachidonic acid may be the key to teaching an old dog new tricks.

Additionally, lipoic acid can chelate iron and other metals, keeping them from fueling free radical chain reactions. By itself, lipoic acid is highly protective of brain cells, but there is another element that can be combined with it that makes it even more powerful: carnitine

Scientifically-proven anti-aging combination

Carnitine is an amino acid that has a special role in energy production. It transports fuel into mitochondria for conversion to energy-ATP. Carnitine levels decline with age, and so does its transport. By supplementing with carnitine, studies show that old mitochondria can have the energy production of young mitochondria. In a stunning report that was published in the Proceedings of the National Academy of Science, researchers at the University of California at Berkeley showed that elderly rats given L-carnitine doubled their activity to a level approaching that of young rats. (Young rats given L-carnitine were like five year-olds on jet fuel). Researchers were able to correlate increased activity with increased energy production in the animals' mitochondria.

As great as it was to get the old mice up and going again, their increased energy came with a price: a 30% increase in free radicals. This is where lipoic acid comes into the picture. When the same researchers added lipoic acid to the L-carnitine supplements, oxidative stress was reduced to the level of youngsters and physical activity was even greater than that achieved with lipoic acid alone. Memory was enhanced, and when the researchers looked at the hippocampus-a brain structure having to do with memory-they found that the combination of L-carnitine and lipoic acid actually kept the mitochondria from aging.

The Anxious Bassett Hound

Cleo was scared. Scared of noise, scared of sudden movements, scared to go outside. She was given an herbal sedative which did not help. Her caretaker noticed that Cleo was hypersensitive to sound and light.

Cleo began to have seizures, and was put on phenobarbital. Normally, this drug has a sedative effect. In Cleo's case, it did stop the seizures, but did not stop the anxiety. When her caretaker brought her in for vaccine boosters, the vet suggested they not be done (annual vaccinations are controversial and in many cases may be unnecessary.) Instead, he focused on Cleo's anxiety, and put her on a new supplement known as L-theanine.

Theanine is a unique amino acid extracted from tea that has an anti-anxiety effect. Japanese researchers have obtained a patent on it for the treatment of anxiety and behavioral problems in cats and dogs. It works for several things, including persistent barking, general phobias, unsocial behavior, spraying (cats) and abnormal vocalizing. Cleo was sent home with a dose of 100 mg twice a day.

For years nobody paid much attention to the diets of their cats and dogs. They got the scraps off the table, or the mice from the barn and that was about it. But when these animals began being used in laboratories, it became imperative to know their nutritional requirements. "Complete and balanced nutrition" pet food is a billion dollar offshoot of "lab chows." The industry has contributed substantially to understanding the nutritional requirements of our "best friends." But science is moving on now, beyond what it takes to keep an animal on its feet, to what it takes to keep an animal healthy in the long run. New research shows that cats and dogs respond positively to some of the same supplements we take. Lower vet bills and happier animals is our reward for optimal nutrition.

Her caretaker called four days later, saying that not only was the dog cured, but that her husband was going to try theanine for his sleep problems. Cleo has taken L-theanine for over a year. She no longer takes phenobarbital and has not had any further seizures.



Resources

To view which brands of dog food contained detectable levels of pentobarbital in the FDA study, see <http://www.fda.gov/cvm/efoi/DFchart.pdf>. For a brief report of the study, see <http://www.fda.gov/cvm>.

For more on the American Association of Feed Control Officers (AAFCO), see <http://www.AAFCO.org>. The FDA can be accessed at <http://www.fda.gov/cvm>.

Earth Island Institute has done several reports on commercial pet food and rendering plants, including "The Dark Side of Recycling", fall 1990; "Food Not Fit for A Pet", summer 1996. "Look Inside" a Rendering Plant, summer 1996. See www.earthisland.org.

Cats are strict carnivores. Their requirement for meat protein is three times higher than omnivores like dogs. They must have meat protein to maintain health. Meat should be the first ingredient in a cat's diet. Commercial pet food made with human-grade meat is available online. Brands include Wysong, Wellness, PetGuard and Active Life.

Books

Ann Martin looked into the pet food industry after her own dog almost died from contaminated commercial dog food. An updated version of her book, *Food Pets Die For* is now available for \$13.95. Call, toll-free, 877-695-2211 or visit www.newsagepress.com. The book is also available through bookstores online.

Martin Goldstein is a Cornell-educated veterinarian who practices holistic vet care. *The Nature of Animal Healing*. (Knopf 1999).

References

- Mazzon E, et al. Effect of N-acetylcysteine on gentamicin-mediated nephropathy in rats. *Eur J Pharm* 2001, 424:75-83.
- Conesa EL, et al. N-acetylcysteine improves renal medullary hypoperfusion in acute renal failure. *Am J Physiol Regul Integr Comp Physiol* 2001, 281:R730-7.
- DiMari J, et al. N-acetylcysteine ameliorates ischemic renal failure. *Am J Physiol* 1997, 272(3 Pt 2):F292-8.
- Parker CR, et al. The localization of DHEA sulfotransferase in steroidogenic and steroid metabolizing tissues of the adult rhesus macaque monkey. *Endocr Res* 2000, 26:517-22.
- Shen S, et al. Recutition in DNA dmage in brain and peripheral blood lymphocytes of elderly dogs after treatment with dehycroepiandrosterone (DHEA). *Mutat Res* 2001, 480-81:153-62.
- Scott BC, et al. Lipoic and dihydrolipoic acids as antioxidants. A critical evaluation. *Free Radic Res* 1994, 20:119-33.
- Cameron NE, et al. Effect of alpha-lipoic acid on vascular responses and nociception in diabetic rats. *Free Radic Biol Med* 2001, 31:125-35.
- Packer L, et al. Neuroprotection by the metabolic antioxidant alpha-lipoic acid. *Free Radic Biol Med* 1997, 22:359-78.
- Gotz ME, et al. Effect of lipoic acid on redox state of coenzyme Q in mice treated with 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine and diethyldithiocarbamate. *Eur J Pharmacol* 1994, 266:291-300.
- Muller U, et al. Prolonged pretreatment with alpha-lipoic acid protects cultured neurons against hypoxic, glutamate-, or iron-induced injury. *J Cereb Blood Flow Metab* 1995, 15:624-30.
- Barbiroli B, et al. Lipoic (thioctic) acid increases brain energy availability and skeletal muscle performance as shown by in vivo ³¹P-MRS in a patient with mitochondrial cytopathy. *J Neurol* 1995, 242:472-7.
- McGahon BM, et al. Age-related changes in LTP and antioxidant defenses are reversed by an alpha-lipoic acid-enriched diet. *Neurobiol Aging* 1999, 20:655-64.
- Hagen TM, et al. Acetyl-L-carnitine fed to old rats partially restores mitochondrial function and ambulatory activity. *Proc Natl Acad Sci* 1998, 95:9562-66.
- Hagen TM, et al. Feeding acetyl-L-carnitine and lipoic acid to old rats significantly improves metabolic function while decreasing oxidative stress. *Proc Natl Acad Sci* 2002, 99:1870-5.
- Liu J, et al. Age-associated mitochondrial oxidative decay: improvement of carnitine acetyltransferase substrate-binding affinity and activity in brain by feeding old rats acetylcarnitine and/or R-alpha-lipoic acid. *Proc Natl Acad Sci* 2002, 99:1876-81.
- Liu J, et al. Memory loss in old rats is associated with brain mitochondrial decay and RNA/DNA oxidation: partial reversal by feeding acetylcarnitine and /or R-alpha-lipoic acid. *Proc Natl Acad Sci* 2002, 99:2356-61.
- Head E, et al. Oxidative damage increases with age in a canine model of human brain aging. *J Neurochem* 2002, 82:375-81.
- Hounsom L, et al. Oxidative stress participates in the breakdown of neuronal phenotype in experimental diabetic neuropathy. *Diabetologia* 2001, 44:424-8.
- McGahon BM, et al. Age-related changes in LTP and antioxidant defenses are reversed by an alpha-lipoic acid-enriched diet. *Neurobiol Aging* 1999, 20:655-64.
- McGahon BM, et al. Age-related changes in synaptic function: analysis of the effects of dietary supplementation with omega-3 fatty acids. *Neuroscience* 1999, 94:305-14.
- Ramakers GM, et al. A postsynaptic transient K(+) current modulated by arachidonic acid regulates synaptic integration and threshold for LTP induction in hippocampal pyramidal cells. *Proc Natl Acad Sci* 2002, 99:10144-49.
- Ford I, et al. The effects of treatment with alpha-lipoic acid or evening primrose oil on vascular hemostatic and lipid risk factors,

blood flow and peripheral nerve conduction in the streptozotocin-diabetic rat. *Metabolism* 2001, 50:868-75.

Greene EL, et al. Alpha-lipoic acid prevents the development of glucose-induced insulin resistance in 3T3-L1 adipocytes and accelerates the decline in immunoreactive insulin during cell incubation. *Metabolism* 2001, 50:1063-69.

Yorek MA, et al. Effect of increased concentration of D-glucose or L-fucose on monocyte adhesion to endothelial cell monolayers and activation of nuclear factor-kappaB. *Metabolism* 2002, 51:225-34.

Tarello W. Dermatitis associated with *Dirofilaria (Nochtiella) repens microfilariae* in dogs from central Italy. *Acta Vet Hung* 2002, 50:63-78.

Siakotos AN, et al. Assessment of dietary therapies in a canine model of Batten disease. *Eur J Paediatr Neurol* 2001, 5 Suppl A:151-6.

Sousa CA, et al. Dermatitis associated with feeding generic dog food: 13 cases (1981-1982). *JAVMA* 1988, 192:676-80.

Morris JG, et al. Assessment of the nutritional adequacy of pet foods through the life cycle. *J Nutr* 1994, 124:2520S-34.

Czarnecki-Maulden GL, et al. Evaluation of practical dry dog foods suitable for all life stages. *JAVMA* 1989, 195:583-90.

Kittleson MD, et al. Results of the multicenter spaniel trial (MUST): taurine- and carnitine-responsive dilated cardiomyopathy in American cocker spaniels with decreased plasma taurine concentration. *J Vet Intern Med* 1997, 11:204-11.

Maia OB, et al. Evaluation of the components of a commercial probiotic in gnotobiotic mice experimentally challenged with *Salmonella enterica* subsp *enterica* ser Typhimurium. *Vet Microbiol* 2001, 79:183-9.

Chew BP, et al. Dietary β -carotene absorption by blood plasma and leukocytes in domestic cats. *J Nutr* 2000, 130:2322-25.

[Back to the Magazine Forum](#)

All Contents Copyright © 1995-2009 Life Extension Foundation All rights reserved.

LifeExtension[®]

These statements have not been evaluated by the FDA. These products are not intended to diagnose, treat, cure or prevent any disease. The information provided on this site is for informational purposes only and is not intended as a substitute for advice from your physician or other health care professional or any information contained on or in any product label or packaging. You should not use the information on this site for diagnosis or treatment of any health problem or for prescription of any medication or other treatment. You should consult with a healthcare professional before starting any diet, exercise or supplementation program, before taking any medication, or if you have or suspect you might have a health problem. You should not stop taking any medication without first consulting your physician.