

Does Your Pet Really Need 'Biologically Appropriate' Food?

If you ask a conventional veterinarian or even a board-certified veterinary nutritionist if you should feed your dog or cat biologically appropriate pet food, you're bound to get a rapid response that it's not scientifically proven to be superior. But here's the dark secret they're not telling you.

Analysis by [Dr. Karen Shaw Becker](#)

STORY AT-A-GLANCE

- The big players in the ultraprocessed pet food industry seem confused as to whether biologically appropriate nutrition is important for dogs and cats
- Sales of biologically appropriate, fresher food commercial diets are increasing because a growing number of pet parents are searching for better ways to treat the epidemic of chronic illness in dogs and cats
- There is much less research into fresher, biologically appropriate diets, compared to ultraprocessed pet foods, however, existing studies do show that given the choice, both dogs and cats will choose to eat food very low in carbohydrates, and that fresher foods offer vast microbiome benefits
- While pet food industry giants and the conventional veterinary community continue to insist carb-heavy, highly refined, biologically inappropriate diets are just fine for dogs and cats, it will remain the job of pet parents to use common sense and seek better nutrition for their animal companions

Here's an interesting question posed in a pet food industry journal article a few years back: "How important is biologically appropriate pet food?"¹

Here's my question in response: How could feeding animals the nutrition their biology is designed for not be important? How is that even a question in this day and age?

Of course, since this is an industry journal, the focus of the articles is most often on what types of pet food are selling well (and therefore are most profitable), and this one is no different. From the article:

"Growth of sales of biologically appropriate pet foods has been fueled by anecdotal reports of health benefits and marketing focusing on the domestication of cats and dogs from their wild ancestors."

In case you aren't aware, the big players in the pet food industry, as well as most conventional veterinarians and board-certified veterinary nutritionists, shun anecdotal reports, even if they number in the thousands (as the American Holistic Veterinary Medical Association members have reported).

But what they don't mention, and most pet parents don't realize, is that the vast majority of pet food research is funded by — you guessed it — big players in the pet food industry researching their own ultraprocessed brands or the raw materials they intend to use in their feed-grade, highly refined fast-food products.

And guess who conducts most of the nutrition training in veterinary schools. Yep, big pet food. The "anecdotal reports of health benefits" the industry is so quick to disregard are also from parents who've switched a dog or cat from processed food to a fresh food diet.

Most of these dietary changes are initiated to address a health problem the pet is dealing with, and in the majority of cases, the animal's health improves, even when the new biologically appropriate diet doesn't directly resolve the disease. Food matters and nourishing the body appropriately can result in profound changes.

Dogs and Cats Aren't Designed to Eat Carbs

According to Emma Bermingham, PhD, a senior research scientist at AgResearch in New Zealand, as quoted in the journal article:

*"The fact that neither the Association of American Feed Control Officials (AAFCO) nor the European Pet Food Industry Federation (FEDIAF) stipulate a requirement for carbohydrates may also have had an impact on the growth of high-protein high-fat diets."*²

This is actually a great point and one that is ignored across-the-board by processed pet food manufacturers. There's a very good reason neither AAFCO nor the FEDIAF has set a minimum requirement for carbohydrates in commercial dog and cat food. It's because dogs and cats have no nutritional requirement for carbohydrates.

Since most **ultraprocessed pet foods** are very carb-heavy, it's no wonder the industry is seeing growth in high-protein, high-fat, biologically appropriate fresh food diets for cats and dogs. And now there are even low carb kibble companies popping up, attempting to rival the ever-growing fresher-food companies. There's plenty of marketing that adequately confuses many people trying to make good nutrition decisions for their animals.

The problem remains that the bulk of industry-produced pet food is made with poor quality "feed-grade" ingredients that don't promote health and have been high-heat processed, creating toxic foodborne byproducts like **AGEs** and ALEs that cause organ degeneration. Fortunately, more and more pet parents are seeing what the industry and sadly, the conventional veterinary community refuse to see.

Plain old common sense and frustration with conventional veterinary medicine is leading a growing number of people with sick pets to see if a transition to a less processed, more biologically appropriate diet might improve their animal companion's health. And even better, thousands of proactive, wellness-oriented pet lovers are deciding to never even bring a bag of pet "junk food" into their homes in the first place.

What Constitutes a Biologically Appropriate Diet?

A "biologically appropriate diet" means the bulk of an animal's nutrition comes from raw or minimally processed whole, real foods that exceed the species' minimum nutrient requirements, with a macronutrient profile that mimics an ancestral diet. Phrased another way: these are diets that most closely resemble what the animal would naturally consume. Breaking news: no animal is evolutionarily wired to eat little brown crunchy food balls from birth to death.

"Macronutrients" are fat, carbohydrates, and protein. The amount of fat, carbs, and protein an animal chooses to consume, and in what form, constitutes that animal's "ancestral diet." Dr. Ellen Dierenfeld's incredible zoologic work on analyzing the whole-body nutritional composition of hundreds of prey species made Steve Brown's work of identifying

the ancestral nutrient composition of dogs and cats so much easier.

Brown, a fresh food researcher and formulator, found that for both dogs and cats, approximately 50% of daily calories come from a variety of clean protein sources and 50% of calories come from unheated/raw, healthy fats, with an array of prebiotic roughage (antioxidant-rich, low glycemic veggies and polyphenol-rich fruits that are so critical for microbiome and gut health) sprinkled in.

And while nutritionally balanced, moisture-rich, fresh whole food isn't the cure for every disease that afflicts cats and dogs, it's the very best foundation upon which to build a protocol that can return a sick animal to good health. Food that sits on grocery store or pet food shelves for 12-24 months isn't the fuel that fixes broken bodies or prevents degenerative disease.

Simply put, when your pet's organs must work overtime to digest and absorb high glycemic, carb-loaded, ultraprocessed fast food, it inhibits the body's capacity to achieve and maintain a state of homeostasis. Homeostasis refers to the ability of the body to find and maintain a condition of equilibrium (stability) within its internal environment when dealing with external changes.³

Fortunately, but also equally heartbreaking, is the fact that most dogs and cats are remarkably resilient. They're able to survive on diets they were never designed to eat. However, let's not kid ourselves — degeneration does occur as the result of inappropriate, empty, and deficient nutrition. It's just that the changes are gradual and often hidden until a disease is full-blown. As Dr. Richard Patton says, "nutrition is rarely a crisis," and the consequences of good and bad food choices often manifest months to years down the road.

In my opinion, because the industry has sold pet lovers on the concept of feeding super convenient "pet food," we've created dozens of generations of nutritionally compromised pets who suffer from degenerative diseases linked to nutritional deficiencies and food-related microbiome imbalances that negatively impact all aspects of health. It's encouraging to know that more and more pet parents are catching on, which is why biologically appropriate, fresher food diets are now a rapidly growing segment of the pet food market.

And, thankfully, more pet parents are also asking manufacturers why they aren't producing species-specific, low carb, minimally processed diets, leading to many more options (and thereby, competition) entering the marketplace. But with all competitive markets, the quality of commercially available fresher food diets ranges from very high quality (all human grade, organic and free-range ingredients) to terrible (poor quality foods that haven't been analyzed for nutritional adequacy).

A good example of pet parents not being able to discern fresher pet food quality or ask the right manufacturer questions is the current top selling "fresher pet food" tubes being sold out of branded refrigerators in most grocery stores across north America. These products typically carry a shelf life of six months, while real meat should only be stored in the refrigerator for no more than three days.

So, as always, you must do your homework before deciding which type of diets to feed and what brands you can trust. To maintain a healthy microbiome, research is clear that the consumption of a wide variety of different foods is critical, so rotating through a variety of nutritionally complete homemade recipes and a handful of brands you trust is most ideal.

Research on Biologically Appropriate Pet Diets Is Lacking

In the article, Bermingham points out that there is much less published research on biologically appropriate diets for pets, compared to kibble. This is absolutely true, and a huge obstacle toward helping more veterinarians and pet owners learn the benefits of nutritionally balanced, fresh food diets. But thankfully, this is changing with market demand.

Fortunately, there are small studies being conducted here and there, but funding is always a huge hurdle. Big pet food companies like Nestlé Purina and Mars have deep pockets and the ability to conduct all the research they need to develop their own products. This isn't the case in the much smaller biologically appropriate pet food segment. You can find a growing list of fresh pet food studies [here](#).

According to Bermingham, due to this lack of research, studies of biologically appropriate diets for humans and rodents have been extrapolated to cats and dogs. However, humans and rodents are omnivores (both plant and meat eaters), whereas cats are obligate carnivores, meaning they need animal protein, fats, and a moisture-rich diet to survive, and dogs are scavenging carnivores.

A question we should all be asking is why, if the ultraprocessed pet food industry recognizes this distinction, it persists in producing biologically inappropriate, plant-based dry diets for cats.

Fascinating Results from a Study of Raw vs. Kibble Fed Dogs

A few years back, I had the opportunity to visit a veterinary school in Helsinki, Finland to learn more about the amazing work of Anna Heilm-Bjorkman, DVM, PhD, who has studied pet food and raw meat diets in pets for almost 20 years. Her research at that time involved studying the levels of homocysteine, a marker of inflammation and chronic disease in the body, relating to diet.

Dr. Bjorkman's experiment involved 4 groups of dogs for 6 months (a quick video summary of this study can be found [here](#)). The first group consisted of previously raw fed dogs who were switched to dry food for the second half of the study (the last 3 months).

The second group consisted of dry fed dogs that were switched to raw food for 3 months. The third and fourth groups continued eating their regular food (either dry or raw for the full 6-month study).

As I would expect, the dogs fed raw food who continued to eat raw food had the lowest homocysteine levels, at 0.17mM (a good thing). The dogs who ate dry food and continued eating dry food had the highest levels of homocysteine, *10 times more* than the raw fed group (1.57mM).

Also as expected, the dogs raised on raw food and switched to kibble had a stunning 5-fold increase in levels of the disease marker in the body at the completion of the study (0.77mM). What we hope the pet food industry will pay attention to is the fact that the dogs raised on dry food and changed to raw food for three months had a dramatic decrease in the disease marker (0.3mM).

Eating a biologically appropriate diet isn't just trendy, it's healthier. This type of groundbreaking research should be pivotal in changing the way pets are fed and how pet food is produced, if the industry is genuinely focused on improving the health of companion animals through the products they manufacture.

Additional Ongoing Independent Pet Food Research

Bark & whiskers (formerly Healthy Pets) partnered with **CANWI** to fund the first comparative study of dry, canned, and raw foods and the amount of toxic byproducts found in these foods after processing. The results showed significantly more of these damaging chemical compounds in canned and dry food, as compared to raw pet food.⁴ A lifetime of consuming only highly refined foods and no real, fresh food has the same consequences in all mammals — ill health.

In addition, I visited with Italian researchers Dr. Misa Sandri and Professor Bruno Stefanon at the University of Udine, who completed a study documenting the profound benefits of a fresh food diet compared to processed dog food on the gut microbiome.⁵ These results mirror what New Zealand researchers demonstrated earlier this year, which is that raw food diets are healthier (in one way or another) than biologically inappropriate diets.⁶

One now-defunct non-profit group, **KetoPet Sanctuary**, used raw, ketogenic diets as a powerful adjunctive tool in fighting some of the most aggressive types of canine cancers, with head turning results.⁷ This prompts the question, if raw food diets are powerful enough to address cancer (one of the most diagnosed and devastating diseases plaguing domesticated dogs today), why isn't the pet food industry spending more money researching them?

Big Pet Food's Argument for Feeding Dogs Plant-Based Diets

Birmingham moves on to dogs, and describes them as "... omnivorous carnivores [that] can eat a wide range of foods to survive." From the article:

"Their ancestors hunted in packs and were competitive feeders after a kill, so they have little control over the amount of food they eat. Dogs are opportunistic scavengers.

Genetically, dogs have cognitive and brain function differences from wolves and other wild dogs. There is also genomic signature in domestic dogs that suggests mutation in starch digesting enzymes, allowing dogs to better digest carbohydrates than their wild ancestors."

This mutation in starch digesting enzymes in domesticated dogs is based on a study published in 2013 that the big pet food companies absolutely love. For more information, watch my **interview with veterinarian and author Dr. Doug Knueven**, who explains why the study's assumptions and conclusions are based on incomplete data and are generally flawed.

Yes, dogs and humans coevolved,⁸ with both species expressing epigenetic changes in response to agricultural practices (including the upregulation of amylase production), but this is hardly justification for feeding canines a vegetarian or plant-based diet. And dogs can consume a wide variety of foods to survive, but surviving is very different than thriving with an extended lifespan. Optimal nutrition is very different than meeting minimal nutrient requirements (as set forth by the pet food industry).

The industry has intentionally shifted the perception of dogs as carnivores to dogs as omnivores and now vegans, to recycle inappropriate agricultural waste (including peanut hulls, feather meal, and many other sources of "fiber" that would otherwise be discarded) into profitable pet food.

Telling pet owners their animal's minimal consumption of rendered (USDA-inspected and failed) meat is a root cause of global warming seems to be the next step in convincing you it's your moral duty to make your pet a vegan. It's also the justification for the manufacture and sale of ultraprocessed dog foods loaded with feed-grade plant-based leftovers and other inappropriate ingredients.

Dogs are scavenging, or facultative carnivores, which in general terms means they are primarily meat-eaters, but can survive on plant material alone if necessary. The key word here is "survive." To survive is not to thrive. To thrive is to live vigorously, with a robust healthspan and exceptional lifespan. To survive means simply to stay alive.

One of the arguments for feeding dogs grain or **plant-based diets** is the distinction between obligate and scavenging carnivores. It's assumed, since dogs aren't strict carnivores like cats, they can easily transition to a meatless diet. This is a dangerous misconception.

Just because dogs fed plant-based diets are able to stay alive doesn't make them omnivores. Taxonomically, dogs are in the Order Carnivora and the family Canidae. They, like other carnivores, cannot make vitamin D from sunlight, they must consume it in their prey. They also cannot convert plant-based omega-3 fatty acids to DHA and EPA, they must consume these important long-chain essential fats in the foods they eat. Dogs are not wolves, but they certainly are not vegetarians, either. Healthy meat must be the foundation of their diet for long-term wellbeing.

The metabolic and physiologic consequences of feeding heat-processed, high-starch diets to animals who require neither, include increased risks for all the major diseases affecting pets today. Government agencies are begging people to consume less highly refined foods, so why is the pet food industry insisting it's the healthiest choice for our furry family members?

What Cats and Dogs Choose to Eat When They Get to Choose

From the pet food industry journal article:

"When cats were offered three diets with varying macronutrient profiles, they choose a high-protein, high-fat diet. The total consumption of the three diets by cats, when averaged out, showed that cats preferred protein 50 percent to 52 percent by energy, fat 36 percent to 50 percent by energy, and carbohydrate 2 percent to 12 percent by energy."

"In the same type of three-diet-offering study, dogs choose a high-fat, moderate-protein diet. The average result for these tests was a preference for 30 percent to 38 percent protein by energy, 59 percent to 63 percent fat by energy, and 3 percent to 7 percent carbohydrate by energy."

It's clear from these study results and others like them that both cats and dogs naturally choose diets very low in carbohydrates. At the risk of sounding like a broken record, that's because low carb diets are biologically appropriate for carnivorous canines and felines.

And yet, at the end of the article, Bermingham states, "...biologically appropriate diets are fitting for cats, but not necessarily for dogs." That makes absolutely no sense! It almost seems that ultraprocessed pet food manufacturers have conceded they aren't feeding cats the nutrition their bodies need but refuse to admit that dogs are carnivores as well, and also need to eat species-specific diets.

Determining the Carb Content of Dry Pet Food

If you're interested in learning what percentage of the food you're feeding your dog or cat is made up of carbohydrates, you won't find that info on the package label. So locate the "guaranteed analysis" on the bag of food and apply the following formula:

$$100\% - \% \text{ protein} - \% \text{ fat} - \% \text{ moisture} - \% \text{ ash (if not listed, use 6\%)} = \% \text{ carbs}$$

Fiber is indigestible roughage that doesn't break down into sugar, so you don't have to include it in the formula.

Example, cat food: Royal Canin Indoor Adult Dry Cat Food

$$100\% - 27\% \text{ protein} - 15\% \text{ fat} - 8\% \text{ moisture} - 6\% \text{ ash} = \mathbf{44\% \text{ carbs}}$$

Example, dog food: Royal Canin Medium Adult Dry Dog Food

$$100\% - 23\% \text{ protein} - 12\% \text{ fat} - 10\% \text{ moisture} - 6\% \text{ ash} = \mathbf{49\% \text{ carbs}}$$

In both these examples, the amount of carbohydrates far exceeds the amount a cat or dog is able to effectively digest and assimilate. And believe it or not, most grain-free dry formulas are even higher in carbs than regular formulas like the Royal Canin products.

If you're feeding a dry diet, it might be free of grains, but it can't be free of carbs, because carbs are necessary to form kibble. If you look at the package label, you'll see potato, sweet potato, lentils, peas (pea starch), chickpeas, tapioca, or another carbohydrate source(s). I also recommend avoiding the trendy "keto" dry foods; they're also highly refined and loaded with advanced lipoxidation end-products (ALEs) that stress the pancreas.

Carb-heavy pet food can lead to blood sugar fluctuations, insulin resistance, obesity, diabetes, and other inflammatory health problems in pets, including skin and gut issues. Carb intake above your dog's or cat's daily needs triggers internal enzyme factors to store the excess as body fat.

The Biologically Appropriate Diet I Recommend

The goal should be to mimic your pet's ancestral diet as closely as possible. I recommend feeding a nutritionally balanced, species-specific diet, which means food containing high-quality animal protein, moisture, healthy fats, and fiber, with low to no starch content.

A nutritionally balanced raw or gently cooked homemade diet is my **top choice for pets**, but you should only attempt this if you're committed to doing it right. If you don't want to deal with balancing diets at home, a great alternative is to feed a pre-balanced, commercially available raw food (pasteurized to be bacteria-free, if you prefer). A freeze-dried/dehydrated low-carb diet is second best. Human-grade canned food is a mid-range choice but can be hard to find. Rotate brands and protein sources frequently to nourish the microbiome.

And be sure to incorporate a variety of **fresh foods** into your pet's diet, too. Foods from your refrigerator supply critical polyphenols, enzymes, cofactors, and flavonoids found only in raw, unprocessed, unadulterated foods, so use fresh produce as meal toppers or treats throughout the day.

Sources and References

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^{1,2} [PetfoodIndustry.com, April 5, 2017](#)

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⁴ [Bridglalsingh, S. University of Georgia ProQuest Dissertations Publishing, 2020. 28025289](#)

⁵ [BMC Veterinary Research, 2017](#)

⁶ [PeerJ, 2017 Mar 2:5:e3019](#)

⁷ [Seyfried, T.N. et al. Case Reports, Front Nutr. March 28, 2023](#)

⁸ [Nature Communications 4, Article number: 1860 \(2013\).](#)
