What's Really in That Kibble?

As pet parents, we strive for their ultimate health, but could our choices in their diet be leading them down a path of nutritional deficiencies and sensitivities? It's time to question the status quo and the real price of convenience feeding.

Analysis by Dr. Karen Shaw Becker

STORY AT-A-GLANCE

- A recent study from Brazil suggests hydrolyzed chicken liver powder is easier for dogs to digest than poultry byproduct meal; however, this is important primarily to ultraprocessed pet food producers looking to avoid using high quality animal tissue in their formulas
- Hydrolyzed proteins are intact proteins that have been chemically pulverized into smaller pieces to avoid stimulating the immune system of pets with gastrointestinal issues
- Poultry byproduct meal consists of the ground, rendered, clean parts of the carcasses of slaughtered poultry, such as necks, feet, undeveloped eggs, and intestines, exclusive of feathers
- Your best bet is to avoid ultraprocessed diets containing poor quality ingredients in favor of a biologically appropriate diet of raw or minimally processed whole, real foods with a macronutrient profile that mimics an ancestral diet

As many of you who read here regularly know, ultraprocessed pet food producers are always on the hunt for low-cost ingredients — even as more and more pet parents show interest in higher protein, low carb formulas. Industry experts claim their concern about increased use of animal muscle meat in pet foods is around sustainability, but I'm not convinced it isn't primarily about the cost of animal protein vs. plant protein and carb fillers.

So, it's unsurprising that pet food industry-funded research continues to look for ways to avoid using high quality animal protein, and a recent example is a Brazilian study that looked at the effects of two poor quality proteins, hydrolyzed chicken liver powder vs. poultry byproduct meal, on certain canine health measures.[1]

Hydrolyzed Proteins

The hydrolyzation process was invented and patented nearly 25 years ago. According to a filing at FreePatentsOnline.com, preparing hydrolyzed food product (in this case chicken) for animal consumption involves the following process:[2]

> *"A food product for animal consumption is prepared from an animal by-product, preferably a complete avian carcass. A heated hydrolyzing agent is applied by spray or dip coating to the carcass exterior. After initiation of hydrolysis, the carcass is ground, enhanced by additives, then steam heated to a temperature of about 200 degrees F.*

> *The heated by-product is provided as a slurry or as dry particulates to a twin-screw **extruder**. As it is transported across several zones of the extruder, the by-product is thoroughly dispersively mixed and subjected to high pressures and temperatures, vented to release moisture, neutralized with a neutralizing agent, and blended under high temperatures and pressures sufficient to completely sterilize what has become a highly uniform and homogeneous by-product mass.*
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> *The by-product mass is extruded and cut into pellets, which then are dried to a moisture content at or below 10 percent.*"

In a nutshell, hydrolyzed proteins are intact proteins that have been chemically pulverized into smaller pieces to theoretically avoid stimulating the immune system of pets with "sensitive stomachs."

Why Hydrolyzed Proteins?

Pet food manufacturers introduced hydrolyzed protein formulas to the marketplace by suggesting that intact proteins are the culprit causing the epidemic of diet-related health conditions in pets. Hydrolyzed protein formulas are marketed as hypoallergenic diets for pets with food sensitivities. Additional marketing claims for these foods are that they are palatable and easy to digest and feature high amino acid and protein content.

In my experience, pets fed unrefined high quality, human-grade protein from a variety of animal sources do not typically develop sensitivities to quality unadulterated proteins. It is when the same low-quality, ultraprocessed protein is fed day in and day out for months or years that **leaky gut** occurs and paves the way for chronic gut disease and an eventual intolerance to a specific protein.

Many pet parents find an inexpensive ultraprocessed pet food their dog or cat really seems to like, and they feed it exclusively for long periods of time. Eventually, many of these pets develop sensitivities to certain ingredients, often the low-grade source of protein included in the formula.

In my opinion, the initial problem isn't with the intact animal protein. The problem is factory-farmed, poor quality, rendered animal protein that has been extruded and high heat processed. While no published research exists to explain why carnivores develop sensitivities to protein, I and many of my integrative veterinarian colleagues suspect foreign contaminants and food processing byproducts may be the reason.

The growth hormones and antibiotics fed to factory-farmed food animals, glyphosate residues, along with the chemical residues and MRPs (Maillard reaction products) that result from high heat processing may actually be the triggers for food sensitivities, not protein itself.

Poultry Byproduct Meal

The Association of American Feed Control Officials (AAFCO) definition of poultry byproduct meal:

> *"Consists of the ground, rendered, clean parts of the carcasses of slaughtered poultry, such as necks, feet, undeveloped eggs, and intestines, exclusive of feathers except in such amounts as might occur unavoidably in good processing practices."*[3]

Keep in mind byproducts are the parts of animals that are NOT meat. Poultry by-products include parts of the fowl that have little or no nutritional value, from a digestibility standpoint — and there's no way to tell which parts have been mixed into your pet's food.

Which Poor Quality Protein Performed Better?

Researchers at the Universidade Federal do Rio Grande do Sul in Brazil conducted the study, which involved 12 healthy adult dogs. The dog foods used in the experiment contained either poultry byproduct meal or hydrolyzed chicken liver powder in concentrations of 24%, 32%, or 40%. The dogs were divided into two groups of six; each group was fed one of the diets for 30 days before rotating to another formulation.

The study co-authors found that diets containing higher inclusion of hydrolyzed chicken liver had improved protein apparent total tract digestibility (ATTD). However, the same diets impaired the ATTD of fat and carbohydrates and decreased metabolizable energy. High-protein diets retained more water in the feces and increased the fecal output. Fecal consistency was affected, scored as soft and moist stools, but remained within an acceptable score.

Dogs fed poultry byproduct meal diets had greater concentrations of fecal protein fermentation metabolites, such as ammonia and branched-chain fatty acids, possibly related to a greater amount of undigested protein that reached the hindgut and was fermented.

Here's the point of contention most functional medicine vets have with hydrolyzed diets: if the patient has developed a sensitivity to rendered chicken, does pulverizing and hydrolyzing it to allow for better digestion address the potential long-term consequences of feeding a reactive diet that temporarily improves symptoms? No.

Why Not Feed Your Pet a Biologically Appropriate Diet?

The problem is 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 ultraprocessed pet "junk food" into their homes in the first place.

A biologically appropriate diet means the bulk of an animal's nutrition comes from 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.[4]

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, often times as chronic gut and skin diseases.

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.

If your pet has developed a food sensitivity and symptoms are temporarily better by eating a hydrolyzed diet, now is the time to **identify what new, human-grade protein** you can begin introducing, very slowly, to build gut health and move towards less ongoing immunoreactivity, down the road. Slowly transitioning to human-grade, gently cooked "hypoallergenic," novel protein sources while simultaneously addressing gut dysbiosis is the first step in addressing the root cause of food intolerances, long-term.

Thankfully, there are dozens of fresher-food start-ups offering nutritionally complete, highly digestible novel protein diets for sensitive dogs and cats. And more pet parents are also asking manufacturers of highly refined diets 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 feed-grade food products typically carry a suspiciously extended shelf life, while human-grade, real meat should only be stored in the refrigerator for no more than three days. Look for a novel protein, gently cooked diet your pet doesn’t react to in the freezer section of pet food retailers, then introduce it over the next 3 months, while beginning your leaky gut protocol.

So, as always, you must do your homework before deciding which type of diets to feed, what quality your pet food is and what brands you can trust. To maintain a healthy microbiome and prevent food sensitivities from developing, 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.

Sources and References

PetfoodIndustry.com, November 16, 2023

[1] Pinto, CFD et al. Journal of Animal Science, Volume 101, Published 31 October 2023

[2] FPO, Process for preparing hydrolyzed food product for animal consumption, United States Patent 5620737

[3] Pet Food Institute, Selected AAFCO Ingredient Definitions and Common Language Translation

[4] Biology Online