

Are You Feeding Your Pet Wrong?

Find out the surprising benefits of freeze-dried diets and how they could provide superior nutrition and digestibility for your beloved pet. Learn about the research that could change the way you think about your pet's diet forever.

STORY AT-A-GLANCE

- A recent study concluded that the amino acids (the “building blocks of protein”) in freeze-dried dog diets, which are growing in popularity with pet parents, are highly digestible
- The amino acids in animal protein are essential — your pet’s body is literally made of protein, including her bones, muscles, arteries, veins, skin, hair, and nails, along with the tissues of her heart, brain, liver, kidneys, and lungs
- Nature dictates that cats must, and dogs should, eat diets high in animal protein for long term health and wellness
- Animal sources of protein, including eggs, are better nutritionally than plant-based proteins because they contain all the essential amino acids
- It’s important to note that not all animal protein is digestible and assimilable for your dog or cat, for example, beaks, hooves, and feathers

In a 2022 study, researchers at the University of Illinois at Urbana-Champaign and the University of Guelph in Canada teamed up to evaluate how well dogs digest the amino acids — the building blocks of proteins — in freeze-dried dog diets. These diets are growing in popularity not only for dogs and cats, but other pets as well.

In my [**ranking of 13 pet foods**](#), a dehydrated or freeze-dried raw diet came in fourth after a nutritionally balanced raw homemade diet, a nutritionally balanced cooked homemade diet, and a commercially available balanced raw food diet. If you can’t or don’t want to feed fresh raw food, a dehydrated freeze-dried raw diet that is reconstituted with water is a good alternative. These diets are shelf-stable so they’re very convenient. To make them biologically appropriate, all you have to do is add water.

Dehydrated or freeze-dried raw diets haven’t been processed at high temperatures. In many cases, the nutrient value has been retained minus a balanced fatty acid profile.

That said, dehydrated and freeze-dried foods by definition are not the same as fresh raw diets, but they can be a great choice for people on the move, people who go camping with their dog or cat, and for pets that go to day care or need to be boarded. It’s really the next best thing to a fresh raw food diet. Make sure the brand you select is nutritionally balanced for all life stages.

Amino Acid Digestibility Exceeded 90%

For the study, the results of which were published in the Journal of Animal Science,¹ the research team tested three types of meat-based freeze-dried dog foods manufactured by Primal Pet Foods:

- Traditional freeze-dried nuggets
- Low-temperature freeze-dried nuggets
- A “hybrid” freeze-dried nugget (a blend of the other two types)

The study didn’t involve dogs, but rather a “precision-fed cecectomized rooster assay.” This is accomplished via a surgical procedure, similar to a human appendectomy, that turns roosters into “an effective, efficient model for dogs’ and cats’ digestive systems.”²

The 12 roosters were randomly assigned to one of the three diets, along with corn. The scientists analyzed the birds’ urine and feces to determine how well they had digested the amino acids in the dog food. According to Linda Case of The Science Dog blog, who dug into the results:³

“Comparisons among the three foods showed no significant differences in amino acid digestibility values, and all of the values were high. Some were extremely good ...

- **Essential (aka indispensable) amino acids** — Always of greatest importance are the 10 essential amino acids. Most of these had digestibility values that were higher than 90%. For example, in all three products, methionine digestibility was between 93% and 95%; tryptophan digestibility was as high as 98% (!!); and arginine digestibility varied between 94% and 96%.
- **A bit lower** — A few of the essential amino acids had digestibility values that were less than 90% (histidine, lysine and threonine), but these still had very respectable values in the mid to high 80s.
- **Reactive lysine** — Measuring reactive lysine and calculating a ratio of reactive to total lysine (RL:TL) provides a helpful measure of heat damage to a food’s protein. The values for all three of the freeze-dried products were high which reflects a low degree of heat-damage to the protein in the foods.

*In general, the low-temperature nugget had the greatest numerical AA digestibilities, likely due to reduced heat damage, but all diets performed very well,” the scientists wrote.*⁴

Why Amino Acid Digestibility Is So Important

Amino acids are “the building blocks of protein,” and proteins are the “building blocks of life.” Proteins are essential to the survival of animals and found in every organism on the planet. Some facts about protein according to the Weston A. Price Foundation:⁵

- It is essential to a healthy heart and body
- Animal sources of protein, including eggs, are better nutritionally because they contain all the essential amino acids
- Too much poor-quality protein and too little protein can be damaging to the body
- Protein isn’t stored in the body like fat — it must be eaten daily
- The one nutritive substance that stands before all others is protein

Your pet's body is literally made of protein, including his bones, muscles, arteries, veins, skin, hair, and nails. The tissues of his heart, brain, liver, kidneys, and lungs are made of proteins.

Proteins oxygenate the blood and transport fat and cholesterol throughout your pet's body. The enzymes in proteins help to digest the food he eats, synthesize essential substances, and break down waste products.

Proteins in combination with sterols produce hormones that regulate the sensitive chemical changes that take place constantly within your animal companion's body. And the chromosomes that will be passed on to your pet's offspring (and that were passed on to him) include proteins in their structure.

Animal vs. Plant Protein in Pet Food

Animal protein and plant protein are absolutely not equivalent forms of nutrition for canines and felines. Dogs and cats need 22 amino acids to be healthy. Dogs can synthesize (make) 12 of those 22; cats can synthesize 11. The remaining amino acids must come from the food they eat.

Omnivores (e.g. humans) have the physiological ability to turn plant proteins into the missing pieces needed for a complete amino acid profile. To a very limited extent dogs can do this, but a cat's body isn't equipped for it whatsoever.

Cats must eat animal meat and organs to meet their nutritional needs, and plant-based proteins (grains and vegetables) simply aren't a good substitute. Felines lack the specific enzymes necessary to use plant proteins as efficiently as animal proteins.

The proteins derived from animal tissue contain a complete amino acid profile. Plant-based proteins don't contain all the amino acids critical for the health of an **obligate carnivore**.

While cats must eat animal meat, dogs should eat animal meat as well. A major pet food company conducted a study several years ago that examined how the type of protein fed to adult and senior dogs affected body composition (muscle versus fat). The dogs were fed diets with varying amounts of protein from chicken and corn gluten meal.⁶

Dogs in one group were fed a diet of exclusively chicken; the rest were fed diets with decreasing amounts of chicken and increasing amounts of corn gluten meal. Compared with the dogs fed 100% chicken, the dogs fed the other diets had:

- A decrease in lean tissue
- An increase in body fat
- Decreased levels of blood proteins that are universal markers of a well-nourished body

The same company did another study focused on the decline in body composition and muscle-specific proteins in aging dogs.⁷ Senior dogs were fed a 32% chicken-based diet, a 32% chicken and corn gluten meal diet, or a 16% chicken-based diet.

The dogs fed the 32% chicken-based diet had better body composition than healthy young adult dogs, and identical muscle-specific protein levels. Neither of the other two groups of senior dogs (those fed chicken + corn gluten meal or the diet with just 16% chicken) had similar results.

The pet food company concluded that feeding dogs diets containing primarily animal-based protein sources provides several benefits, including:

- Helps to maintain muscle mass
- Reverses some age-related changes in skeletal muscles in senior dogs
- Enhances the long-term health and well-being of both adult and senior dogs

Interestingly, despite the company's conclusion years ago that animal-based protein is the best type of protein for dogs, it doesn't appear they've incorporated their study findings into their dog food formulas. A quick glance at the ingredient lists for several of the company's senior and mature adult dog foods reveals corn meal and a variety of other plant-based ingredients at the top of the list.

Important Note: Not All Animal Protein Is Digestible

Protein quality is extremely variable, including protein sourced from animals. There are highly assimilable and digestible proteins that are easy for your pet's body to absorb and use, and there are proteins that are impossible to digest. For example, beaks, feet/hooves, hides, tails, and snouts are 100% animal protein, but all 100% is indigestible.

All protein has a biologic value, which is its usable amino acid content. Eggs have the highest biologic value at 100%. Fish is a close second at 92% (though **I don't recommend feeding most fish to pets** on a daily basis). Feathers, as you might guess, have zero biologic value.

Sources and References

^{1,4} [Oba, P.M. et al. Journal of Animal Science, Volume 100, Issue Supplement 3, October 2022, Page 48](#)

² [PetfoodIndustry.com, December 7, 2022](#)

³ [The Science Dog, November 1, 2022](#)

⁵ [The Weston A. Price Foundation](#)

^{6,7} [IAMS](#)
