

Note to readers: This E-book is best consumed with companion E-books:

- Home-Prepared Diets for Dogs Part Two: Raw Diets
- Home-Prepared Diets for Dogs, Part Three: Cooked Diets
- Home-Prepared Diets for Dogs, Part Four: Finer Points of Home-Prepared Diets

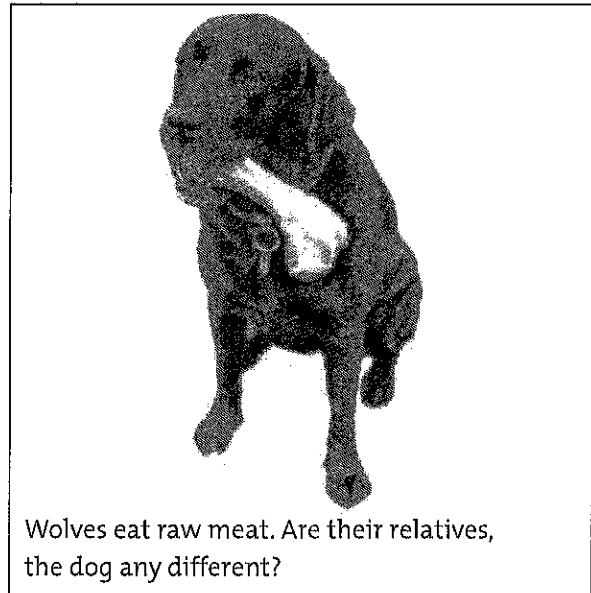
# The Case for Home Prepared Dog Food

**Now you can control your dog's nutritional intake for proper balance, number of calories, improved wellness—and lower cost.**

By Mary Straus

For many years, I fed my dogs the finest kibble diets I could find and thought I was doing the best I could for them. Then, in 1997, a seminar at Wolf Park in Indiana changed my life, and my dogs' lives. Watching wolves tear into a whole deer carcass, I was struck by how far we have come from the natural diet that our dogs evolved to eat, and it started me thinking that maybe there was a better way.

After a year of research, I began feeding my dogs a homemade raw diet in December 1998. At the time, I had two dogs who suffered from environmental allergies, and one dog (Piglet) was on Rimadyl for arthritis. To my surprise, within



three months one of my dogs became completely allergy-free, and Piglet no longer needed Rimadyl for arthritis pain. The third dog improved, but continued to have some problems with allergies.

Not every dog with health problems gets better when switched to a homemade diet, but throughout the years, I've heard many first-hand accounts of dogs with serious conditions who improved or even completely recovered following such a diet change. People whose dogs suffered from seizures, IBD and other digestive disorders, allergies (both food and environmental), skin problems, chronic ear infections, arthritis, and more have seen their dogs' symptoms reduced or eliminated after they began feeding a homemade diet.

At first, it seems counterintuitive that a diet change would affect disorders like environmental allergies, seizures, or arthritis, but there are several factors involved. Poor-quality and overprocessed ingredients, artificial colors and preservatives, hormones, antibiotics, and other chemicals can contribute to overall ill-health and create or increase allergic sensitivity.

Carbohydrates that are often 50 percent or more of dry dog foods are harder to digest than animal proteins and can lead to inflammation in the body.

In contrast, homemade canine diets, particularly those that have few or no grains or starchy carbs, are higher in protein (which

supports both the skin and the immune system) and are easier to digest (which can improve the health of the digestive tract and keep the body's immune system from becoming overreactive).

Grains and other carbohydrates may cause problems due to allergic reactions, gluten intolerance, difficulty digesting carbs, or other factors. If your dog is overweight or suffers from any of the ailments listed above, you may want to try feeding a homemade diet without grains or starchy carbs to see if your dog improves.

Healthy dogs also benefit from a homemade diet. Fresh foods supply nutrients in their natural form, whole and complete. Processing causes foods to lose much of their nutritional value, which must then be added back in synthetic form (that long list of chemicals at the end of dog food ingredient lists). Processed foods can also contain potentially harmful substances, such as oxidized fats and acrylamide, a carcinogen formed when high-carbohydrate foods are cooked at high temperatures. When you prepare your dog's food yourself, you control all of the ingredients, making it easy to avoid any foods your dog may react to, and to adjust the diet as needed based on weight, activity level, health conditions, and any other specific needs your dog may have.

There are many different types of homemade diets, including raw and cooked diets, with or without grains; diets that contain whole, raw,

meaty bones or ground raw bone; diets without bone that use a different form of calcium supplement; and diets that add fresh raw or cooked foods to a commercial pre-mix.

While feeding a homemade diet sounds like a good idea, it's not easy to figure out what that entails, or how to ensure that you provide all the nutrition that your dog needs. Despite what some will try to tell you, there is no one "right" way to feed your dogs. Each dog is an individual, and what works for one may not work for another. The best way to feed your dog may also depend on how much time and effort you are able to devote to putting together a proper diet. While fresh foods are healthier than processed foods, a good commercial diet is better than a poorly designed homemade diet. If you don't feel comfortable preparing a diet yourself, you can still improve the diet you feed by adding fresh foods.

You can consider this E-book and its companions as a "short course" on preparing your dog's food yourself, but we also suggest that anyone who wants to feed their dogs a homemade diet read at least one book (preferably more) on the subject before beginning, in order to have a better understanding of your dog's nutritional needs and how they are met by the foods we provide

### Don't rely on recipes

It is exceedingly difficult to ensure that your dog gets all the nutrients he needs if you feed the same food all the time. Even following a diet that has been evaluated using a spreadsheet and compared to the AAFCO (Association of American Feed Control Officials) or NRC (National Research Council) standards does not ensure the diet will be nutritionally complete, for several reasons.

Just as with our own diets, what's considered "good," "optimal," or even "essential" is continually changing. A good example of how these standards can change is the discovery in 1987 that cats were dying of heart failure due to a lack of adequate taurine in cat food. Previously, the NRC did not recognize taurine as an essential nutrient for cats, and no one knew how much cats required. Now, newer research shows that taurine may also be conditionally essential in the dog's diet, though there are as yet no standards requiring it. Ongoing research reveals more all



Karen Engman feeds a home-cooked diet to four of her five dogs, including 8-year-old Oliver, above. The fifth dog eats a raw commercial diet.

the time, but this is an endless task. There is simply no way to know for certain exactly what nutrients, in what combinations, our dogs need for optimal health.

In 1985, the NRC warned in its introduction to *Nutrient Requirements of Dogs* that "caution is advised in the use of these requirements without demonstration of nutrient availability, because in some cases requirements have been established on the basis of studies in which nutrients were supplied by highly purified ingredients where digestibility and availability were not compromised by the interaction of dietary constituents and effects of processing. Practical diets formulated from commonly used ingredients are not free of such interactions and effects, and therefore may provide less available nutrients than the amounts measured by chemical analysis.

"For this reason, such diets formulated to the chemically assayed nutrient levels expressed may prove inadequate in meeting the nutritional needs of dogs".

They add, "Finally, although data are unavailable for the dog, it should be recognized that inclusion of large amounts of fiber in the diet may adversely affect nutrient availability." In the Overview section at the beginning of the 2006 edition, the authors admit, "An extensive amount of new research conducted since the previous National Research Council publications on dogs and cats was available for the NRC report, yet several gaps still exist in our knowledge of requirements for specific nutrients."

In addition to not knowing for certain what dogs require, we also cannot know exactly what nutrients are contained in the foods we feed. A spreadsheet analysis of a diet, even if done by a veterinary nutritionist, does not guarantee that the diet actually supplies exactly those levels of nutrients. The figures in the USDA Nutrient Database that are used to determine nutritional value are averages. The source and handling of foods can have a considerable impact on their nutritional value, based on such factors as whether livestock are fed grains or grass, whether the plants fed to them were grown in soil that was depleted of minerals, how fresh the food is, and whether or not it was frozen.

Many recipes, including those recommended

by veterinarians and nutritionists, make no effort to be nutritionally complete and simply tell you to add a "complete and balanced vitamin/mineral supplement," with no further guidance. Since supplements vary widely, there is no way of knowing whether this would even come close to meeting your dog's needs.

We simply cannot know enough about nutrition to say with certainty that any single recipe is sufficient to meet all nutritional requirements. Feeding your dog the same recipe every day is equivalent to feeding your child a diet of nothing but Total cereal. If it doesn't make sense for a child, why would it make sense for our dogs?

### **Variety is the key**

Just as with our own diets, the best way to ensure that our dogs receive all the nutrients they need is to feed a wide variety of fresh, healthy foods in appropriate proportions.

Dr. Mike Richards says on his VetInfo.com website, "I think the major problem with owner-prepared diets is an attempt to satisfy the needs of pets by making one recipe and not varying it. I strongly suspect that if pets were fed a variety of foods that approximates the food triangle suggested for humans, an adequate diet would be obtained. On the other hand, trying to formulate a single recipe that meets the needs of pets long term is very, very difficult to do."

Variety is important no matter what type of diet you feed. Even if you use commercial foods, it is best to find at least two or three different brands, using different protein sources, and rotate between them, anywhere from daily to every few months.

Also, even "complete and balanced" diets may contain quite different levels of nutrients. If you always feed the same food, any nutritional deficiencies or excesses present in that food will affect your dog over time. The same is true if you feed different varieties made by the same company, since they tend to use the same vitamin/mineral formulations in all of their foods.

Your dog is also more likely to develop food allergies if fed the same food all the time. It takes time for an allergy to develop, typically months to years. Dogs that are fed the same food

for extended periods of time will often develop allergies to one or more of the ingredients in that food. Variety is particularly important for puppies, since puppyhood is when the immune system learns which foods are normal and not a cause for reaction.

The only restriction to consider in terms of feeding lots of variety is to reserve at least some of the exotic proteins in case a novel protein is needed to test for or treat food allergies. There's no need to feed venison, duck, rabbit, ostrich, buffalo, kangaroo, and beaver to your dog. Save some of them in case they are needed in the future.

### Three basic rules

Feeding a homemade diet is not as complicated as it might seem. There are only three rules:

1. Variety
2. Balance over time
3. Calcium

Variety means feeding lots of different foods, such as beef, lamb, chicken, turkey, pork, fish, eggs, and dairy. Vegetables, fruits, and grains can also be added in limited quantities. Variety also means feeding different parts, such as muscle meat, heart, liver, and other organs. Different types of meat and different cuts of meat all have different nutrient profiles, so you provide a wider nutritional range by varying what you feed. It's fine to use a few staples but you should not feed just one or two foods to the exclusion of everything else.

**Balance over time:** When you feed a homemade diet, it is not necessary that every meal be "complete and balanced," as the commercial dog foods are. Just as with our own diets, it's only important that the diet be balanced over time, with nutritional needs being met over a period of days to weeks. It is only when you feed the same food every day that you need to be concerned about that food alone supplying everything that your dog needs.



Many owners who are new to preparing their dogs' food feel most comfortable when omitting raw bones, instead utilizing cooked grains, ground muscle meats (cooked or uncooked), and supplements. With time, and great results, many grow bolder and eventually embrace diets comprised mostly of raw meaty bones.

It is imperative that all homemade diets provide the right amount of calcium. The bones included in most raw diets will supply all the calcium needed. If you feed a diet that does not include edible bones, you will need to add specific amounts of calcium supplements. Our E-book on cooked and raw diets that do not include bone will provide detailed information as to how much calcium you need to add to your dog's home-prepared diet.

### Raw feeding myths

Many questions arise when we consider the idea of feeding raw meat, eggs, and bones to our dogs. What about the bacteria in raw meat and eggs? Isn't it dangerous to feed whole bones? Is too much protein harmful? We'll address these issues briefly below.

**Bacteria:** Dogs' systems were designed to handle bacteria. It's generally thought that their stomachs contain a stronger concentration of stomach acid than ours, making their digestive systems more efficient at killing most bacteria. Also, in relation to our digestive system, their digestive tracts are shorter and simpler, which

helps move food through quickly, without giving bacteria a chance to proliferate.

Consider the fact that, in the wild, wolves eat carrion, and bury food to eat days or weeks later, with no harmful effect. Our own dogs even eat stool without becoming ill. While it is possible for dogs to be affected by bacteria found in raw food and elsewhere, it is unusual.

Many of the bacteria we worry about, such as salmonella and E. coli, are commonly found in the intestines of healthy dogs. Dogs who are stressed, ill, or immune-compromised may be more susceptible to problems from bacteria. While many dogs on chemotherapy and with other serious health problems have no problems with raw meat, you may want to cook their food instead. You can also soak raw meat in food-grade hydrogen peroxide, though this will not work for ground meat, which is also likely to have a higher bacterial load.

Keep in mind that commercial foods are also often contaminated with bacteria.

Raw pork, which can be a source of trichinosis and Aujeszky's Disease (pseudorabies), often causes particular anxiety. Both of these diseases, however, have been just about completely eradicated from USDA-inspected products in this country, though they may still be a concern elsewhere, or if you obtain meat from a local farm that has not been inspected. Freezing for three weeks should make the meat safe. Note that trichinosis is also found in carnivorous wild game, including bear and wild boar, and in that case, freezing will not kill it.

Freezing will also kill certain other parasites, such as tapeworms and toxoplasma, but it does not kill bacteria

*Biotin deficiency:* Another question that often comes up in discussions about home-prepared canine diets has to do with the avidin in raw egg whites causing a biotin deficiency, but there is no need to worry. Egg yolks contain biotin, which balances out the avidin in the egg whites when you feed whole eggs. Cooking, however, deactivates avidin and may make egg whites more digestible, so it's also fine to feed eggs that are soft- or hard-boiled, or lightly scrambled.

*Bones:* What about bones? Haven't we heard from

the time we were children that you should never give chicken bones to dogs? That's true, if you're talking about cooked bones. Cooking makes bones hard, dry, and splintery. There is no question that cooked bones are dangerous for dogs.

Raw bones are much softer and more flexible, and are easily digested by most dogs. Those of us who feed our dogs a raw diet commonly feed what are called "raw meaty bones" (RMBs), parts that include edible bone along with at least half meat, and that are fully (or mostly) consumed. In addition to the nutritional value they provide, RMBs are also a source of chewing pleasure and help to keep teeth clean and gums healthy. Examples include chicken necks, backs, and leg quarters; turkey necks; lamb breast and necks; and pork breast (ribs) and necks.

Most dogs do fine with raw meaty bones, but a few may have problems, especially if they try to swallow large chunks. While it is unusual, dogs have been known to choke, especially when fed pieces that are round and meaty. Turkey necks are the parts that most frequently cause choking in large dogs, while chicken necks can cause the same problem in small dogs.

You should always supervise your dogs while they are eating, and it's a good idea to know how to do the Heimlich maneuver on dogs, just in case. Small dogs are also more susceptible to esophageal damage from bones. There are risks and benefits to feeding whole bones and the decision whether or not to feed them is a personal one. Keep in mind that choking or esophageal damage can also be caused by greenies, tennis balls, rawhides, sticks, and even kibble.

If you're concerned about dangers from whole bones, you can grind the bones or cut them into bite-sized pieces. You can also cook bones to softness in a pressure cooker (the only kind of cooked bones that are safe to feed). You can still give your dogs recreational bones, ones that your dog cannot consume, for chewing pleasure and dental health.

People also worry about dogs breaking teeth on bones. This is more of a concern with recreational bones, particularly those that the dog can fit between his molars and crunch down on, such as marrow bones. These weight-bearing bones are much harder than the RMBs that are

consumed. Knuckle bones are less likely to cause tooth damage because dogs can't fit them into their mouths and bite down on them.

Most of the RMBs that are recommended for dogs are soft, at least to a dog's jaws. Beef bones, in contrast, are quite hard. I know of dogs, including my own, who have broken teeth on beef ribs and neck bones. Many people give these to their dogs as recreational bones but large dogs may consume them. Teeth do become more brittle with age, so you may need to exercise more caution as your dogs age.

*Excessive protein:* Lastly, there is no danger in feeding a high-protein diet to puppies or senior dogs. Studies have shown that high protein does not cause orthopedic problems in puppies, nor kidney disease in older dogs.

Protein is highly beneficial; it supports the immune system and the central nervous system, contributes to healthy skin and coat and to wound healing, and helps to maintain lean body mass while lowering the percentage of body fat. Dogs fed a high-protein diet are often calmer and less hyper than dogs fed on high-carb diets. Higher protein is one of the major benefits of feeding a homemade diet to dogs, though you can also increase the protein level by adding fresh, high-protein foods to a commercial diet.

### **Adding fresh food to a commercial diet**

If you are not ready to make the switch to a homemade diet, you can still improve your dog's diet by adding fresh foods to his dry or canned food. Despite the warnings from pet food manufacturers, you will not unbalance the diet by adding a moderate percentage of fresh foods – you should be able to replace about 25 percent of the diet with fresh foods without concern. When you start to feed more than that, it becomes more important to feed variety and proper proportions. If you want to feed 50 percent or more as fresh food, then you should add organs along with other foods, and you should consider adding calcium if you are not feeding bones. The more fresh food you feed, the greater the importance of variety and proportions, as well as calcium, becomes. More information will be provided in future articles.

Good foods to add to a commercial diet

include eggs and meat (raw or cooked), canned fish with bones (jack mackerel, salmon, sardines), yogurt or kefir, cottage cheese, and healthy leftovers. Raw meaty bones can also be fed, though it's best if they're not combined with kibble in the same meal. You can add veggies and fruit in small amounts, but remember that commercial foods are already high in carbohydrates, so there is little benefit in adding more. I would not recommend adding grains to a commercial diet at all.

Puppies and seniors will benefit from the addition of high-quality fresh foods as much or more than younger adult dogs will. A high-protein diet is good for almost all dogs and will not cause harm.

Norma Crawley of Ardmore, Oklahoma, reports, "Since I began incorporating raw with kibble, our three dogs do everything short of tucking their napkins in and clicking their silverware together at dinnertime. They dine as if they are at "21." They seem happier, healthier, and they are my constant shadows from late afternoon through the evening. It's made such a positive difference in three canine lives, and mine too. I've always fed a high quality kibble through the years, but who knew this raw business could be so much fun, and so good for them?"

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