
FEEDING YOUR CAT: KNOW THE BASICS OF FELINE NUTRITION

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Diet is the brick and mortar of health. This web page lays out some often-ignored principles of feline nutrition and explains why cats have a better chance at optimal health if they are fed a **quality canned food diet instead of dry kibble**. Putting a little thought into what you feed your cat(s) can pay big dividends over their lifetime and very possibly help them avoid serious, painful and costly illnesses. An increasing number of American Veterinary Medical Association members, including board-certified veterinary nutritionists, are now strongly recommending the feeding of canned food instead of dry kibble.

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Cats Need *Animal*-Based Protein

Cats are obligate (strict) carnivores and are very different from dogs in their nutritional needs. What does it mean to be an 'obligate carnivore'? It means that your cat was built by Mother Nature to get her nutritional needs met by the consumption of a large amount of animal-based proteins (meat) and derives much less nutritional support from plant-based proteins (grains). It means that cats lack specific metabolic (enzymatic) pathways and cannot utilize plant proteins as efficiently as animal proteins.

It is very important to remember that not all proteins are created equal. **The protein in dry food, which is heavily plant-based, is not equal in *quality* to the protein in canned food, which is meat-based.** The protein in dry food is, therefore, less **bioavailable** to your cat.

Do not be confused by the listing of the protein percentages in dry food compared to canned food. At first glance, it might appear that the dry food has a higher amount of protein than the canned food—but this is *not* true on a **dry matter basis** which is the accurate way to compare the two foods. Most canned foods, when figured on a dry matter basis, have more protein than dry food. And remember, even if this were not the case, the percentage numbers do not tell the whole story. It is the protein's bioavailability that is critical.

We Are Feeding Cats Too Many Carbohydrates

In their natural setting, cats—whose unique biology makes them true carnivores—would not consume the high level of carbohydrates (grains) that are in the dry foods that we routinely feed them. You would never see a wild cat chasing down a herd of biscuits running across the plains of Africa or dehydrating her mouse and topping it off with corn meal gluten soufflé.

In the wild, your cat would be eating a high protein, high-moisture content, meat-based diet, with a moderate level of fat and with **only approximately 3-6 percent of her diet consisting of carbohydrates**. The average dry food contains 35-50 percent carbohydrates. Some of the cheaper dry foods contain even higher levels.

This is NOT the diet that Mother Nature intended for your cat to eat.

A high quality canned food, on the other hand, contains approximately 3-6 percent carbohydrates. Cats have a physiological decrease in the ability to utilize carbohydrates due to the lack of specific enzymatic pathways that are present in other mammals, and the lack a salivary enzyme called amylase. They not only have no dietary need for carbohydrates, but too many carbohydrates can actually be highly *detrimental* to their health, as outlined below.

With this in mind, it would be as illogical to feed a carnivore a steady diet of meat-flavored cereals as it would be to feed meat to a vegetarian like a horse or a cow, right? So why are we continuing to feed our carnivores like herbivores? Why are we feeding such a species-inappropriate diet? The answers are simple. Grains are cheap. Dry food is convenient. Affordability and convenience sells.

But is a carbohydrate-laden, plant-based, water-depleted dry food the best diet for our cats? Absolutely not.

Obligate carnivores are designed to eat meat – **not** grains.

Cats Need Plenty of Water *With* Their Food

Another extremely important nutrient with respect to overall health is water. It is very important for a cat to ingest water *with* its food, as **the cat does not have a very strong thirst drive**. This is a critical point. This lack of a strong thirst drive leads to **low-level, chronic dehydration when dry food makes up the bulk of their diet**.

Cats are designed to obtain most of their water *with* their diet since their normal prey contains approximately 70 percent water. Dry foods only contain 10 percent water whereas canned foods contain approximately 78 percent water. Canned foods therefore more closely approximate the natural diet of the cat and are better suited to meet the cat's water needs.

A cat consuming a predominantly dry-food diet does drink more water than a cat consuming a canned food diet, but in the end, when water from all sources is added together (what's in their diet plus what they drink), the cat on dry food consumes approximately HALF the amount of water compared with a cat eating canned foods. This is a crucial point when one considers how common kidney and bladder problems are in the cat.

Learn How To Read a Pet Food Ingredient Label

- The words “natural” or “premium” or “veterinarian recommended” are not necessarily indicative of high quality.
- Contrary to what is often believed, many, if not all, of the so-called ‘prescription diets’ sold in veterinary hospitals are not formulated for optimal health of a carnivore. Unfortunately, many veterinarians are very poorly educated in the area of nutrition. Too often their recommendations are taken from the pet food industry which does not always have your cat's best interest in mind when formulating their products.
- Look for a muscle meat (NOT an organ meat like liver) as the **first ingredient**. (Some of the veterinarian-prescribed foods list liver as a first ingredient.) A muscle meat will be listed as “chicken,” or “turkey,” etc. NOT “chicken meal,” or “chicken by-product meal” or “chicken by-products,” or “chicken broth” or “liver”. The term “meal” denotes that it has been rendered (cooked for a long time at very high temperatures) and is lower quality than meat that has not been as heavily processed. A “meal” product is more commonly found in dry foods. By-products can include feet, intestines,

feathers, egg shells, etc. and are much less nutritious than meat. Liver is not an optimal source for nutrition when compared to a muscle meat.

- Grains should be absent or, at least, only minimally present in the diet. This means if they are present, they should not be among the first three ingredients. Corn, wheat and soy are thought to be common allergens and also cause a rapid rise in blood sugar when compared to other grains such as rice, oats or barley so it is **best to choose a food that does not contain corn, wheat, or soy.**

Common Feline Health Problems and Their Ties to Diet

There is a very strong and extremely logical connection between the way that we are currently feeding our obligate carnivores and many of the life-threatening diseases that afflict them.

- **Diabetes:** Diabetes is a very serious – and difficult to manage – disease that is very common in cats. Why is it so common? The species-inappropriate high level of carbohydrates in dry food wreaks havoc on the blood sugar level of an obligate carnivore. The blood sugar level rises significantly upon ingestion of dry food. With chronic hyperglycemia (high blood sugar) the insulin producing cells in the pancreas down-regulate, or “burn out,” leading to diabetes.
- **Kidney Failure:** Kidney disease is probably the leading cause of mortality in the cat. It is troubling to think about the role that chronic dehydration may play in feline kidney failure. And remember, cats are chronically dehydrated when they are on a diet of dry food.
- **Cystitis (bladder inflammation) and Bladder/Kidney Stones:** Cystitis and stones are extremely common in the cat. The concentration (specific gravity) of the urine is a critical factor in contributing to, or preventing, these serious health issues. Some cats have a higher tendency to form crystals in their urine. Cats on dry food have more highly concentrated urine (higher specific gravity) which means that a higher concentration of stone-forming crystals will be present in the urine. This increases the chance of producing life-threatening stones. Also, a very concentrated level of crystals acts like 60-grit sandpaper on the delicate bladder wall, which can lead to painful cystitis. Cystitis can lead to inappropriate urination (urinating outside of the litter box) and stones can cause a fatal rupture of the bladder. (Any cat that is repeatedly entering the litter box but not voiding any urine is in need of **IMMEDIATE** medical attention!) Cats eating canned food are more appropriately hydrated, and therefore, have more dilute urine (lower specific gravity). This greatly decreases their chance for urinary tract problems.
- **Inflammatory Bowel Disease (IBD):** IBD is thought to be a common cause of vomiting and diarrhea in the cat. There are many unanswered questions with respect to this disease process, but it seems logical to start to “treat” a gastrointestinal problem in the cat with a species-appropriate diet. Too often these cats are treated with a high level of steroids and a so-called “prescription” grain-laden, dry food diet. I feel very strongly that this common therapeutic regimen needs to be re-evaluated. There are an impressive number of anecdotal reports of cats that were terribly ill with IBD exhibiting dramatic improvement when ALL dry food was removed from their diet. Taking it even one step further, **there are many reports of cats with IBD that improved tremendously on a balanced, grainless, raw-meat diet.** (See www.catnutrition.org for more information.)
- **Obesity:** Obesity is an extremely common and very serious health problem in cats. For instance, overweight cats are four times more likely to develop diabetes than cats that are at an optimal weight. Obligate carnivores are designed to meet their energy needs with a high protein, moderate fat diet. Carbohydrates are minimally used for energy and those that are not used are converted to and stored as fat. The so-called “light” diets that are on the market have targeted the fat content as the nutrient to be decreased, but in doing so, the pet food manufacturers have increased the *grain* fraction, leading to a higher level of carbohydrates. Hence, many overweight cats eating these diets are still obese. **These “light” products are among the most species-inappropriate, unhealthy diets available to cat caretakers.** Many caretakers feed very small amounts of these diets hoping that their cat will lose weight but feeding a small amount of a diet that is inappropriate for the species is NOT the answer! The caretaker simply ends up with a crabby, overweight cat.

- **Hepatic Lipidosis (Fatty Liver Disease):** This is the most common metabolic liver disease of cats. Overweight cats that go longer than 48 hours without eating, for any reason, are in danger of developing this serious, and often fatal, disease. Feeding a high-protein, low-carbohydrate diet helps keep cats at an optimal, healthy body weight.
- **Dental Disease:** Long-standing claims that cats have less dental disease when they are fed dry food versus canned food are grossly overrated, inaccurate, and are not supported by recent studies. Many veterinarians are coming to the realization that this is a myth that needs to be dispelled. First, dry food is hard, but brittle, and merely shatters with little to no abrasive effect on the teeth. Second, a cat's jaws and teeth are designed for shearing and tearing meat, and cats that eat dry food grind it in a way that it ends up between their teeth. There it ferments into sugar and acid, thereby causing dental problems. Third, many cats swallow the majority of their dry food whole and thus receive minimal benefit from chewing motion. There are many factors that contribute to dental disease in the cat such as genetics, viruses, and diet. There remain many unanswered questions concerning the impact of diet on dental health, but feeding a high carbohydrate, species-inappropriate dry kibble diet is a **negative factor**, not a positive one. Perhaps a more effective way to promote dental health is to feed large chunks of raw meat which is what cats' teeth are designed to chew. (See below for 'Home Prepared Diets.')

Transitioning Dry Food Addicts to Canned Food

This is the hard part. Cats, like children, often resist what is best for them. The key is to do it **slowly and with patience**. The single biggest mistake I see people make time and again is to say that their cat "won't touch" the new food and then panic and fill up the bowl with dry food. On the flip side, it's not uncommon to hear people who are concerned because they switched their cat to canned food too quickly and their cat developed diarrhea or vomiting.

It's best to take your time with any food transition, by incorporating the new food into the diet a bit at a time and taking up to two weeks to fully switch the cat over to a new diet. That said, some cats that have been on dry food their entire lives will be quite resistant to the diet change and may take several weeks or longer to make the transition to a healthier diet. Others will take to it with the attitude of "finally – an appropriate diet for my species."

For some cats, you will need to use hunger to help with the transition. However, do not let them go longer than 24 hours without eating and some of you may 'weaken' sooner, like I did. At that point, give them only half of what they would normally eat, in order to keep hunger as an incentive. I prefer to try to 'convince' them that a high quality canned food really is good for them, rather than to starve them into it. Here are some tricks for the stubborn ones:

- If your cat has been eating dry food on a free-choice basis, **take up the food and establish a schedule of twice-daily feedings**. Leave the food down for 30 minutes. Once your cat is on a schedule you will notice that he is more enthusiastic about food.
- Cats prefer their food at "body temperature", but do not warm the food more than once or twice as this will promote bacterial growth.
- Sprinkle a very small amount of tuna – or any other favorite treat (some cats do not like fish) - on the top of the canned food and then once they are eating this, start pressing it into the top of the new food. (The "light" tuna is better than the fancy white tuna because it has a stronger smell. Or, Trader Joe's makes a Cat Tuna that is very stinky.)
- Pour a small amount of the water from the tuna over the top of the canned food.
- Crush some dry food and sprinkle it on the top of the new food.
- If you have a multiple cat household, some cats like to eat alone so you may need to take these cats into a separate room and feed them canned food/tuna 'meatballs' by hand. This worked for one of my stubborn, timid cats. In a quiet setting, he would eat from my hand and then, finally, from a bowl. I'm not sure who was being trained.

Home-Prepared Diets

These diets can be the absolute best **or** the very worst thing that you can do for your cat. You must do your homework and educate yourself with regard to preparing a balanced diet for a cat. For example, although meat must be the primary component of a feline diet, a cat cannot live on meat alone. There is not enough calcium in meat (without the bones) to ensure that a safe calcium-to-phosphorus ratio is achieved. Always remember that calcium is not an optional “supplement,” but a very critical component of the diet. The bones must be ground with the meat, or bonemeal must be added to the recipe.

Also, I strongly suggest putting additional taurine into any home-prepared diet to make up for what may get lost from processing or freezing. Use extreme caution if you choose to buy a pre-ground commercial raw pet food. (as opposed to making it yourself using your own grinder or ordering it ground directly from a reputable farm). Personally, I advise against many of the commercial raw diets, because pre-ground meat is much more likely to be contaminated with high levels of bacteria.

If you choose to purchase pre-ground (or whole) rabbit meat which includes the bones and organs, two sources (farms) that I have found to be reputable are www.hare-today.com (814) 587-2178 (on the east coast) and www.wholefoods4pets.com (509) 678-5449 (on the west coast). My cats are thriving on ground rabbit purchased from wholefoods4pets and chicken from Whole Foods Market that I grind myself using a Northern Tool Grinder purchased at Northern Tool. The one that I use is model number [168620](http://Northern Tool).

Many people have a strong negative reaction to feeding a raw meat diet but in reality, a properly handled and prepared raw diet has much less bacteria in it than many commercial pet foods. Commercial pet foods also may contain high levels of mold toxins from grains which are never a danger in a home-prepared, grainless diet. Cats are **very** different from humans with respect to their susceptibility to ‘food poisoning’. Cats have a **much shorter transit time through their intestinal tract** than humans do. (about 12 hours for the cat versus 35-55 hours for the human.) This is a very important point because the more time bacteria spend in the intestines, the more they multiply, eventually leading to intestinal upset.

Purchasing antibiotic- and hormone-free whole meats from a reputable butcher such as Whole Foods Market and adhering to safe meat handling practices are important steps to take when preparing a raw food diet. Good choices include dark poultry meats (legs and thighs) and rabbit. (See www.catfood.catnutrition.org for more information on recipes for home-prepared diets. This site also has a wonderful step-by-step pictorial on how to prepare them.)

People are often overwhelmed or intimidated at the idea of making their cats' food but, in reality, it's quite simple. It's just meat, bones, organs, and a few supplements. And if you have a recipe to follow, it's a piece of cake to assemble everything and have nutritious meals on hand for several weeks that you can freeze. Making your own cat food doesn't mean slaving in the kitchen every day--trust me, if it did, I probably wouldn't be doing it.

Some Final Thoughts

Congratulations if you have made it to this point in this article. You must really care about feeding your cat a healthy diet and are open to new ideas regarding their nutritional needs. This paper has outlined what I feel is optimal nutrition for an obligate carnivore. The most common complaint that I hear from people is that their cat will NOT eat canned food and will ONLY eat dry food.

My cats fell into this category which was not surprising since they had been on a 100 percent dry food diet their entire lives and range in age from 5-10 years. It took me 3 months to convince them that they are **carnivores and need meat** – and not in a dry, overly processed form that also includes far too many carbohydrates and too little water. It was a little rough, at times, since two of my cats get very crabby with their housemates when they are hungry. These boys were occasionally taken into a separate room during the transition period and fed some dry food because I do not like unrest in my home.

Surprisingly, one of my most stubborn dry food addicts is now happily eating a home-prepared raw food diet that he actually likes better than the canned food. To be very honest, it does my heart good to see my little carnivores gnawing on raw meat – eating a diet that was meant for their species. My cats are now eating a species-appropriate diet consisting of raw meats (chicken and rabbit) and organs using a properly balanced recipe, plus a high quality canned food (Wellness), on occasion – for variety and convenience.

I no longer feed any dry food. When I first started the diet transition, I was going to be satisfied with 'giving in' to my dry food addicts and letting their diet consist of 10-20 percent dry food, but I have seen their addiction slowly wane to the point that it is no longer an issue. Moreover, I've come to understand and see first hand that cats do not need, or benefit from, any dry food in their diet. They also do not need access to food 24 hours a day, and that if they're eating two or more filling and nutrition-packed meals daily, they're eating optimally.

Many people who are at work all day worry that their cat will suffer without access to food continuously. But remember--having access to food 24/7 is not how your cat would eat in her natural environment. A healthy cat will not perish if she does not have food available at all times and, in fact, a cat that has worked up a healthy appetite will, with time, reward you by eating a hearty (and healthy) meal with gusto when she's hungry.

Everyone's lives are different and there are several ways to successfully feed your cat high quality nutrition. The goal of this paper is to arm you with knowledge about the special dietary needs of your cat so you can make an informed decision on how and what to feed while striking a balance that works for both of you.

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