

Home-Prepared Diets for Dogs and Cats

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Abstract: Promoting health and wellness in dogs and cats is a common goal for veterinarians and pet owners alike. Over the past decade, a number of highly publicized pet food recalls, as well as a growing awareness of the role of diet in health and disease for people, have changed the way some owners approach mealtime for their pets. Many owners, and some veterinarians, now advocate feeding dogs and cats home-prepared foods (raw, cooked, or both) as the sole source of nutrition for pets and cite either perceived health benefits or a general mistrust of the pet food industry as the reason. It is important for veterinary practitioners to understand the risks and benefits of home-prepared diets, as well as the motivation behind a pet owner's decision to follow this type of feeding regimen, to ensure optimal health for their patients.

Background on Pet Feeding Practices

In the early 1900s, pets were primarily fed household leftovers and “by-products” of human food production (i.e., organ meats and other forms of offal). This was done with limited understanding of nutrient absorption, nutrient interaction, and optimal nutrient intakes for dogs and cats. The fields of nutrition and food science for both human and pet foods have grown dramatically since this time and have led to advances in animal health and wellness. Most commercially prepared moist and dry pet foods are now designed to provide a complete and balanced intake of all essential nutrients when fed exclusively to dogs and cats. In the early 2000s, a pet feeding practice survey¹ found that the proportion of US and Australian pet owners feeding only home-prepared foods was <10% of dog and cat owners.¹ It is important to note, however, that this study was conducted before the large-scale pet food recall in 2007, and, at least in my experience, the prevalence of this feeding practice appears to have increased since that time.

Motivations for Feeding Home-Prepared Diets

For some pet owners, offering a home-prepared diet is in response to concerns about the production of commercial foods; for others, feeding home-prepared foods reinforces the human-animal bond; and for still others, a home-prepared diet is recommended to help manage a medical condition.²⁻⁸ Proponents of home-prepared foods claim that these diets are a safe and natural way to feed animals.^{9,10} Fresh meat, whether fed raw or cooked, is palatable to most dogs and cats. It can also be more digestible^{11,12} and higher in fat than most dry kibbles, but these characteristics depend on the type and cut of meat selected. The result is an animal that often readily eats its food, has lower stool volume, and a shiny

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coat, but again, this varies with the ingredients fed and may not apply to all home-prepared diets. When seen, these attributes are often held up as “proof” of nutritional superiority to commercial dry and moist foods, despite the lack of scientific, peer-reviewed evidence to support the long-term health benefits of these diets. Advocates for home-prepared diets often ignore the potential negative consequences, such as nutrient imbalance if the diet is not developed by a board-certified veterinary nutritionist (or similarly trained individual with expertise in animal nutrition) or if ingredients are substituted at will by the owner. While increased palatability and digestibility are advantages for owners of finicky eaters, these features can also be detrimental to an individual animal if the owner does not monitor total intake and allows the pet to become obese. Additionally, for animals that have very specific nutrient requirements, such as during reproduction and growth or with certain medical conditions (e.g., hyperlipidemia, a history of pancreatitis), feeding a higher-fat, unbalanced diet or one that has excessive or deficient amounts of certain key nutrients can be life-threatening.

Reviews of Home-Prepared Diets

Published reviews of the nutritional adequacy of home-prepared (cooked and raw) diet recipes have found that fewer than half of the recipes used by pet owners provided a complete and balanced source of nutrients.³⁻⁸ Unless the diet was developed by a board-certified veterinary nutritionist, a few consistent deficiencies were found in most home-prepared recipes evaluated, regardless of the ingredients used. Home-prepared diets for dogs and cats often lacked a sufficient source of essential macrominerals, such as calcium, and trace minerals, such as iodine, selenium, copper, and zinc; lacked a source of the essential omega-6 polyunsaturated fatty acids linoleic acid and arachidonic acid; and provided inadequate

Box 1. Home-Prepared Diet Assessment

- **Protein:** Is the protein source animal or plant-based? In general, animal proteins are more digestible for dogs and cats. Animal proteins are strongly recommended for feline diets, but legumes (such as soy, lentils, and chickpea) can be used for canine diets. All feline diets and any vegetable-based diets for dogs should be supplemented with taurine.
- **Fat:** Dogs and cats require a source of the essential omega-6 fatty acid linoleic acid provided by specific vegetable oils and some animal fats. Cats specifically require animal-based fats to provide the essential omega-6 fatty acid arachidonic acid.
- **Carbohydrates:** Carbohydrates are not considered essential for dogs or cats, but they provide energy (calories) in the form of digestible starches and dietary fiber (both structural and fermentable) for optimal intestinal health.
- **Minerals:** Is there a source of macro (e.g., calcium) and trace (e.g., iodine, copper, zinc) minerals?
- **Vitamins:** Is there a source of water-soluble (e.g., vitamin B12) and fat-soluble (e.g., vitamins D and E) vitamins?

levels of essential fat-soluble and water-soluble vitamins, such as vitamins E, D, and B₁₂. These nutrient deficiencies are also often seen in owner-provided recipes evaluated in my practice. Many over-the-counter veterinary supplements are insufficient to meet these requirements, and human supplements may contain ingredients that can be harmful to dogs and cats, such as xylitol in children's chewable multivitamin/multimineral supplements or vitamin D concentrations above the toxic level for dogs and cats. While the perceived benefits of home-prepared diets may be reinforced daily to the owner, nutrient deficiencies in adult animals are insidious and can lead to long-term complications, which can vary from poor skin and coat health to chronic diarrhea, pancreatitis,¹³ osteopenia,¹⁴⁻¹⁷ anemia, and altered drug metabolism, depending on the specific nutrients lacking in the diet. Additionally, not all meat sources are equal in their amino acid profiles, and even seemingly complete foods can be deficient in key essential nutrients^{18,19} or contain excess nutrient levels^{20,21} (**BOX 1**).

Risks of Raw Meat Diets

Consuming a cooked, unbalanced, home-prepared diet can be harmful for an individual dog or cat, but the potential negative consequences of raw meat diets can be disastrous for both animals and people in the household. Any raw meat ingredient can be a potential source of exposure to parasites and bacteria, including *Escherichia coli* and *Neospora*, *Toxoplasma*, *Salmonella*, *Campylobacter*, and *Cryptosporidium* spp. While healthy adult dogs and cats may resist disease induced by these pathogens, young or immunocompromised adult animals are at an increased risk of illness and death with exposure.²² Otherwise healthy adult animals fed raw meat diets can also serve as sources of contamination for people and any other animals in the household.²³⁻²⁷ Raw and cooked bones specifically carry risks of gastrointestinal obstruction/perforation

and tooth fractures and may be an inadequate source of essential minerals (e.g., calcium, magnesium) due to the poor digestibility of larger bones within the canine and feline digestive tract.¹⁴⁻¹⁶ Ultimately, the animal's acceptance of a home-prepared diet does not change significantly when the meat is cooked or when more bioavailable sources of nutrients are used.

Patient and Diet Monitoring

If an owner elects to feed a home-prepared diet, he or she should be counseled on the potential risks of this feeding strategy and cautioned that nutritionally related disease can mimic other forms of chronic illness, and both of these points should be noted in the medical record. A copy of the home-prepared recipe and the source of the recipe should be included with the patient's medical file, and a complete diet history (including all foods and supplements given) should be collected from the owner at each visit. Any otherwise healthy animal eating a home-prepared diet should have an annual physical examination and health screening, including serum biochemistry (with measurement of T₄ level), hematology, and a urinalysis profile (**BOX 2**). Animals with chronic diseases, such as renal disease, hyperlipidemia, or hepatic dysfunction, should be monitored at least every 6 months, if not more frequently depending on their individual needs. While blood work and urinalysis results give veterinary practitioners a general overview of the animal's health status, they cannot pick out specific deficiencies or excesses. Any home-prepared diet recipes should either be obtained from a reputable, trained source or reviewed for nutritional adequacy and appropriateness by a board-certified veterinary nutritionist or similarly qualified individual. Additional resources, including a list of board-certified veterinary nutritionists, can be found through the American College of Veterinary Nutrition (www.acvn.org).

Summary

No one diet fits all when it comes to feeding dogs and cats; what and how to feed vary with life stage, as well as with individual energy and nutrient requirements. The feeding of a balanced home-prepared diet allows for specific ingredient selection, control of key nutrients within the diet, and a more tailored approach to the dietary and medical needs of a veterinary patient, but individual

Box 2. Assessment of Patients Eating Home-Prepared Diets^a

- Review diet with owner at each visit.
- Body weight: Over or under ideal?
- Skin and coat: Skin quality and coat luster may indicate adequate/inadequate intake of certain key nutrients (e.g., essential fatty acids, vitamin E, zinc).
- Serum chemistry (including T₄), hematology, and urinalysis results: Insensitive indicators of nutritional status, but can also be used to screen for and monitor concurrent medical conditions.

^aShould be performed at least annually.

animals may vary in their response to specific diets, and what seems like an optimal diet from an owner's perspective may not be beneficial to the pet. Caution should be used when feeding young, growing animals because higher energy and essential nutrient demands put this group at an increased risk for developmental diseases from improperly balanced diets. Additionally, animals with chronic medical conditions, such as renal compromise, diabetes, or intestinal disease, may be less tolerant of fluctuations in ingredient or nutrient intake that can occur with home-prepared diets, which can interfere with the medical management of these patients. Veterinary practitioners need to understand the risks and benefits of home-prepared diets to ensure optimal health for their patients and to help educate owners about all aspects of this feeding practice.

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