



HALF BAKED Misguidance or ingredient substitutions in a raw diet can lead to malnutrition due to the pet not consuming a complete and balanced diet.



MEET THE AUTHOR

Ed Carlson, CVT, VTS
(Nutrition)
Ethos Veterinary Health,
Woburn, Mass.

Alternative Diets: Grain-free, Raw, and Other Trends

All-natural, organic, corn-free, grain-free, gluten-free, raw, kibble, canned, semi-moist, freeze-dried, frozen: there are so many types of pet foods available today. How do you know which to recommend or feed? This can be quite a controversial topic. Advocates of many diet types often adamantly believe their choice of diet is the best, whether based on facts, anecdotal information, or misinformation. This article looks at some diet option types, pros/cons, facts, and misconceptions.

Ed is the director of technician learning and development for Ethos Veterinary Health and VetBloom. He is also the 2020 president of the Massachusetts Veterinary Technician Association and the treasurer of the New Hampshire Veterinary Technician Association. Ed has served on multiple NAVTA committees and is the 2020 NAVTA president-elect. He obtained his VTS (Nutrition) in 2014 and lectures frequently at local, regional, and national veterinary conferences on a variety of nutrition topics. Ed was also the recipient of the NAVTA 2019 Technician of the Year award.

Monika Wisniewska/shutterstock.com



GLUTEN, CORN, GRAINS, AND ALLERGIES

Misconceptions about various types of pet foods and ingredients found in pet food are often based on current fads or trends in human nutrition. Regardless of where they get their information, owners may incorrectly perceive that human dietary recommendations apply to dogs and cats.

Gluten-Free Diets

Supermarkets carry a wide variety of gluten-free food products intended for human consumption. Celiac disease and gluten intolerance, whether based on scientific evidence or anecdotal information, appear to be quite common in the human population today. Pet owners sometimes mistakenly assume that gluten affects dogs and cats in the same way as humans or that it should be avoided in pet food to prevent health issues.

Gluten is concentrated protein that remains after all the starch is removed from grain. Corn gluten, which is found in some pet foods, is often blamed for gastrointestinal issues by some owners and breeders, who associate it with what they perceive as celiac disease. Celiac disease has only been documented in one specific line of Irish setters, which no longer exists. They reacted to the gluten in wheat, rye, and barley, not corn.¹

Corn-Free Diets

Corn has also been labeled by some owners and breeders as a cheap filler that causes allergies and is not well digested by dogs and cats. In truth, corn is highly digestible,¹ provides a highly available source of complex carbohydrates, and is an excellent source of linoleic acid (an essential fatty acid that is important for healthy skin), as well as essential amino acids and fiber. Documented allergies to corn are quite rare.

Grain-Free Diets

Some owners mistakenly believe grains are common causes of food allergies. Another common misconception is that dogs and cats eating foods containing grains are at increased risk of developing diabetes. The author has not found any published studies to support this belief. In fact, there are no studies indicating that grain-free diets are superior or healthier for dogs and cats than more traditional diets. While some grain-free pet foods provide excellent

Potatoes and tapioca are often used in place of grain in grain-free diets; however, both have a lower nutritive value than grains, containing less protein and more sugar than corn or oats.



nutrition, others may not. Potatoes and tapioca are often used in place of grain in these diets; however, both have a lower nutritive value than grains, containing less protein and more sugar than corn or oats.

In July 2018, the U.S. Food and Drug Administration (FDA) announced that it was investigating a potential link between certain types of dog food containing peas, lentils, other legume seeds, or potatoes as main ingredients and cases of canine dilated cardiomyopathy (DCM). Analysis of 300 reports of DCM, primarily in dogs, found that 90% of the affected animals were eating a grain-free diet and that some had low blood taurine levels.²

In a recently published study, 24 golden retrievers with confirmed DCM and low plasma or whole blood taurine concentrations were followed for 12 to 24 months after a diet change and supplementation with taurine. Substantial echocardiographic improvement was seen in 23 dogs (1 was not available for follow-up). In 9 dogs initially diagnosed with congestive heart failure, the heart failure had resolved to the point that diuretics were discontinued or significantly reduced. All 24 of these golden retrievers were eating grain-free diets at the time of DCM diagnosis.³

While there appears to be a link between “boutique, exotic, and grain-free” (BEG) diets and DCM, to date, no studies have established a definitive link proving grain-free diets are responsible for causing DCM. However, veterinary cardiologists and nutritionists recommend that dogs diagnosed with DCM that are being fed a grain-free diet be transitioned to a conventional commercial diet and supplemented with dietary taurine. Veterinarians are encouraged to report any suspected cases of diet-related DCM to the FDA on its Safety Reporting Portal ([safetyreporting.hhs.gov](https://www.fda.gov/safety/safety-reporting)).



For more on the potential relationship between grain-free diets and DCM, see “Grain-Free Diets and Dilated Cardiomyopathy” by Kara Burns in *Today’s Veterinary Nurse* Winter 2020 issue.

Adverse Reactions and Food Allergies

Ingredients most commonly perceived to be associated with adverse reactions in dogs are beef, dairy products, and wheat and, to a lesser extent, lamb, chicken egg, chicken, and soy. In cats, beef, dairy products, and fish are the most common ingredients perceived to cause adverse food reactions.¹ Actual food allergies are estimated to be responsible for only 1% of skin disease.¹ Adverse reactions to one food often improve from a diet change, not because of an inherent allergy or intolerance of one ingredient, but rather based on factors such as increased digestibility of the new diet, fat, or fiber content.¹

RAW, FREEZE-DRIED, AND FROZEN DIETS

Commercial raw diets are available in many forms; frozen and freeze-dried are the most common. These are often marketed as “complete and balanced,” while others are intended to be fed with additional supplements. All pet food labeled *complete and balanced* must substantiate that claim by containing the recommended level of every nutrient in the relevant Association of American Feed Control Officials (AAFCO) nutrient profile or by having passed feeding trials following AAFCO guidelines.

The internet is also full of recipes for “bones and raw food” or “biologically appropriate raw food” (BARF) homemade diets. Many of these advocate a formula of 60% raw, meaty bones, with the remainder of the diet consisting of green vegetables, eggs, milk, brewer’s

yeast, muscle and organ meats, fish, yogurt, and sometimes fruit, grain, legumes, herbs, vitamins, and supplements. These meals are not expected to be individually balanced in nutrients, but rather, in theory, are to be balanced overall by varying the ingredients from one meal to the other. However, this claim is unsubstantiated, and this feeding practice should not be attempted without consulting a board-certified veterinary nutritionist. While some dedicated pet owners follow these instructions to provide this “balanced over time approach,” many others, however well intended, do not. Many owners begin to make substitutions or do not continue to dedicate the time and effort this method of feeding may require. Ingredient substitutions can lead to malnutrition due to the pet not consuming a complete and balanced diet.

Advocates of raw feeding often compare domesticated dogs to wolves, claiming raw diets to be more natural and healthy. A 2013 study identified mutations in key genes that provide functional support for increased starch digestion in dogs relative to wolves.⁴ These results indicate that these adaptations constituted a crucial step in the early domestication of dogs, allowing the early ancestors of modern dogs to thrive on a diet rich in starch relative to the carnivorous diet of wolves.

Individuals and companies who promote raw diets often refer to the following effects:

- Healthier skin and shinier coat
- Fewer allergy-related issues
- Cleaner teeth and healthy gums, claiming raw meat and bones provide a source of calcium and do not allow plaque to build up
- Leaner body condition that confers a stronger immune system, lower blood pressure, and longer life
- Improved muscle strength and stability
- Lower risk of cancer
- Better digestion and improved stool quality
- Better eye health

These claims are anecdotal and unsubstantiated by evidence-based studies or research.

Health Concerns Associated With Feeding Raw Diets

Pathogenic—and zoonotic—*Salmonella* species, *Listeria monocytogenes*, *Campylobacter* species, *Clostridium* species, and *Escherichia coli* have been associated with feeding raw diets, with *Salmonella* infections being most frequently documented. Clinical signs of

Pets fed raw meat may also contract zoonotic parasites, including *Toxoplasma* and *Echinococcus* species.⁶





salmonellosis may include abortion, anorexia, conjunctivitis, gastroenteritis, hematochezia, and death.⁵ Healthy pets may not show clinical signs of illness when ingesting these bacteria; however, immunocompromised, very young, and very old animals are at significant risk. Pets fed raw meat may also contract zoonotic parasites, including *Toxoplasma* and *Echinococcus* species.⁶

Pathogens may be spread during diet handling and through environmental contamination from animals fed a raw diet,⁷ and they also pose a significant health risk to young children, the elderly, and immunocompromised people. It is therefore extremely important for anyone preparing these diets to practice proper handwashing and to ensure that all utensils, bowls, and surfaces used for the preparation of raw pet food diets are properly cleaned and disinfected.

ORGANIC AND ALL-NATURAL DIETS

The term *organic* refers to the handling and processing of ingredients and products. It does not describe the quality of a product. In order to use this term on the label, pet foods and treats must comply with the U.S. Department of Agriculture's National Organic Program regulations. These regulations govern ingredient sourcing, ingredient handling, manufacturing, and the labeling and certification of products using the term *organic* on the product label.

AAFCO's definition of *natural* is:⁸

A feed or feed ingredient derived solely from plant, animal or mined sources, either in its unprocessed state or having been subject to physical processing, heat processing, rendering, purification, extraction, hydrolysis, enzymolysis or fermentation, but not having been produced by or subject to a chemically synthetic process and not containing any additives or processing aids that are chemically synthetic except in amounts as might occur in good manufacturing practices.

If “natural with added vitamins and minerals” appears on the label, the vitamins and minerals may be chemically synthesized.

The terms *holistic*, *human grade*, *premium*, and *gourmet* are purely marketing terms and have no legal definition.⁹



If “natural with added vitamins and minerals” appears on the label, the vitamins and minerals may be chemically synthesized.

CLIENT COMMUNICATION AND EDUCATION

Communication Strategies

It is important to obtain a full nutritional history for each patient. Start by asking broad, open-ended questions to obtain the most complete history, followed by more specific questions to clarify and ensure nothing has been left out. In addition to how many calories the patient consumes each day, the brand and product name of the primary diet, and type and amount of treats, “people food,” and any supplements provided, be sure to ask why the client selected the particular food. Learning the owner's reasons behind their choices and their perceptions of pet food types allows the veterinary health care team to address misconceptions and provide client education tailored to the individual pet owner.

If the nutritional history reveals that a patient's current diet is not complete and balanced, or if the chosen diet appears to be inappropriate, educating the client about their misperceptions is a delicate issue. Following are some potential strategies for a productive conversation:

- Listen to the client's reasons for feeding the diet in question and their concerns about other diet options. Some owners turn to alternative diets out of concern that their pet will not eat more conventional diets.
- Ask open-ended questions to ensure you understand their viewpoint. Be mindful not to sound or appear judgmental.
- Avoid making disapproving comments, using a negative tone of voice, facial expressions, and body language. If you are perceived as judgmental, condescending, closed-minded, or unwilling to listen and consider their point of view or beliefs, clients are likely to become defensive or simply unwilling to listen to your advice.
- Gently point out any misconceptions or false information, offering facts and references to the correct information.



Remember to make a nutritional recommendation for every patient every time they present to the hospital.



- Some owners are not interested in advice. Others may listen and perhaps discuss or debate the issue, but not be willing to change their feeding practices. Be respectful and do not take refusal personally. Making a nutritional recommendation does not ensure that the owner will follow it.
- As with any medical advice, document the patient's nutritional history and your nutritional recommendation in the patient record.

Nutritional Recommendations

Remember to make a nutritional recommendation for every patient every time they present to the hospital. Consider the patient's weight, body and muscle condition scores, life stage, lifestyle, and any health issues.

Recommend the diet you believe is the best for that particular patient, but remember you may also need to consider the owner's perception of what the best diet is for their pet. When you have done your best to educate your client, but they insist on feeding a diet you do not think is best, consider if there is a way to improve the patient's diet. Perhaps the client would agree to have a veterinary nutritionist evaluate the diet and, if it is not nutritionally balanced, suggest improvements. If the owner is feeding a grain-free diet that does not contain highly digestible ingredients, perhaps you can help them find one that does. If corn-free is all the client will consider, research the available options and recommend the one you believe is best suited for your patient. Suggest or provide a referral to a veterinary nutritionist for clients who want to prepare a home-cooked diet or a raw diet.

Remember, the goal of a nutritional recommendation is to provide the patient with the best possible diet. If the client is not willing to change completely, what recommendations can you make to improve the patient's diet? Be a nutritional advocate for your patients. **TVN**

References

1. Hand MS, Thatcher CD, Remillard RL, et al. *Small Animal Clinical Nutrition*. 5th ed. Topeka, KS: The Mark Morris Institute; 2010:614-618.
2. FDA investigation into potential link between certain diets and canine dilated cardiomyopathy. June 27, 2019. [fda.gov/animal-veterinary/news-events/fda-investigation-potential-link-between-certain-diets-and-canine-dilated-cardiomyopathy](https://www.fda.gov/animal-veterinary/news-events/fda-investigation-potential-link-between-certain-diets-and-canine-dilated-cardiomyopathy). Accessed March 2020.
3. Kaplan JL, Stern JA, Fascetti AJ, et al. Taurine deficiency and dilated cardiomyopathy in golden retrievers fed commercial diets. *PLoS One* 2018;13(12):e0209112.
4. Axelsson E, Ratnakumar A, Arendt ML, et al. The genomic signature of dog domestication reveals adaptation to a starch-rich diet. *Nature* 2013;495(7441):360-364.
5. Lefebvre SL, Reid-Smith R, Boerlin P, et al. Evaluation of the risks of shedding *Salmonellae* and other potential pathogens by therapy dogs fed raw diets in Ontario and Alberta. *Zoonoses Public Health* 2008;55:470-480.
6. Lenz J, Joffe D, Kauffman M, et al. Perceptions, practices, and consequences associated with foodborne pathogens and the feeding of raw meat to dogs. *Can Vet J* 2009;50:637-643.
7. Finley R, Ribble C, Aramini J, et al. The risk of salmonellae shedding by dogs fed *Salmonella*-contaminated commercial raw food diets. *Can Vet J* 2007;48:69-75.
8. Association of American Feed Control Officials. AAFCO talks pet food. [talkspetfood.aafco.org](https://www.aafco.org/talkspetfood). Accessed April 2020.
9. Hand MS, Thatcher CD, Remillard RL, et al. *Small Animal Clinical Nutrition*. 5th ed. Topeka, KS: The Mark Morris Institute; 2010:163-165.

SVBT
Society of Veterinary Behavior Technicians

CONNECT • COMMUNICATE • EDUCATE

SVBT's mission is to enrich the human-animal bond by promoting scientifically based techniques of training, management, and behavior modification.

Benefits of membership:

- > Networking with other behavior professionals
- > Access to educational handouts for in clinic and client use
- > Discounts for products, services, and certifications
- > Educational webinars
- > Quarterly newsletter
- > And more...

Members of SVBT gain access to the professional network, resources, discounts, and special registration for the Clinical Animal Behavior Conference, October 2-4, 2020.

JOIN US TODAY www.SVBT.org

#BehaviorNerdSVBT

#BehaviorMattersSVBT