

Commentary Commentaire

One veterinarian's experience with owners who are feeding raw meat to their pets

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In this opinion article, I discuss the approaches a veterinarian may take, and the consequences, when owners have decided, for whatever reasons, to feed their dog or cat a raw food diet, or to add raw meat to their pet's other food, or to use as treats. A growing number of pet owners are choosing to feed raw meat-based diets (RMBDs) to their dogs and cats. In recent years, raw pet food sales have increased by at least 15% annually (1) and approximately 15% to 25% of dogs and 10% of cats are fed some raw meat. In addition, owners often add raw eggs or meat to an occasional meal, or give dehydrated RMBD treats to their pets (2), usually omitting to inform their veterinarian. I will discuss the various types of raw pet foods, advantages and disadvantages of feeding raw food to dogs and cats, safety issues, and the challenges and opportunities that patients on raw diets present to veterinarians.

My **priorities** are always:

1. Safety for the family,
2. Safety for the pet,
3. That the pet is fed a complete and balanced diet,
4. That we find the food on which the pet thrives, and
5. That the feeding plan is practical for the client, now and in the future.

As no one diet suits every pet, during my nutritional consultations **my pet feeding recommendations** include the following options:

- Good quality commercial dog/cat food, dry and/or canned (the components vary but may include animal protein as the first ingredient, complex carbohydrates, and soluble fiber, but not include corn, wheat or soy, chemicals or artificial additives, colors, flavors, or preservatives),
- Home-prepared cooked complete and balanced diet,

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- Commercial raw meat complete and balanced diet,
- Home-prepared raw meat complete and balanced diet,
- To any of these, add some human food, often fiber as vegetables, and
- Any combination of these options.

My recommendations depend upon an unhurried discussion with the client. **Considerations include:**

- What the client wants to feed,
- Family situation such as pregnancy, children under the age of 5 y, any immuno-compromised family members,
- Pet facial hair length (beards are difficult to clean after every meal),
- The pet's nutritional history including which diets and foods the pet wants to eat,
- Pet health conditions such as significant disease, immune-mediated disease, and current medications,
- Owner financial concerns, and
- Client time constraints.

The final decision is always made by the pet owner. As the client and I discuss their choice of their pet's diet, I note the client's decision, and my recommendations and safety precautions in the pet's medical record. Then I put together a complete and balanced diet appropriate for that pet. At the end of the appointment, a copy of my notes is sent home with the owner and e-mailed to their regular veterinarian.

Types of raw diets available for dogs and cats include:

- **Home-prepared RMBDs.** To ensure that these diets are complete and balanced, calcium, vitamins, minerals, and taurine must be included. This advice can be obtained from a veterinary nutritional consultation by telephone or website.
- **Commercial raw frozen, freeze-dried, or dehydrated meat diets that are not complete and balanced.** These require the addition of a combination of bones, a vitamin and mineral mix, vegetables, and fruit.
- **Commercial raw frozen complete and balanced diets** with a variety of protein sources. Some are limited to one protein source, especially those using exotic meats. Freezing kills a variable percentage of different species of microorganisms (3).
- **Commercial freeze-dried complete and balanced diets** that have been frozen under vacuum to remove nearly all moisture. Freeze-drying leaves the food nearly unchanged compared with raw frozen diets, and kills a percentage of bacteria (4).
- **Commercial dehydrated complete and balanced diets** have been heated slowly to remove nearly all the moisture. Whether the low heat has a significant effect on the

nutritional quality of the food is unknown. The drying results in a reduction of microbial numbers but *Salmonella* and other pathogenic bacteria survive (5).

- **Commercial high pressure pasteurized (HPP) complete and balanced diets** have been subjected to high pressure (43 500 to 87 000 psi) without heating. This process kills most bacteria including *Salmonella* and *Listeria* (6) without altering nutritional quality.

Generally, raw pet diets are made from high quality food sources and aimed at the informed, discerning pet owner. They are **more expensive** than regular dog or cat kibble. The freeze-dried, dehydrated, and HPP foods are more costly than the raw frozen diets due to the additional processing. The costs may be substantial when feeding many cats or medium to large dogs. Nevertheless, solving a problem with diet is better for the pet and cheaper than repeated veterinary visits and expensive medications.

Advantages of feeding a raw meat, complete and balanced diet to dogs and cats include:

- If **the owner believes** that a raw diet is best for their pets, and wants to feed it, this is their choice. Some owners think that a commercial pet food is not good for their dog or cat, and prefer to feed a more natural diet (minimal processing, no grain, and ingredients that they can understand). Owners feeding RMBDs report that their pet has a healthier body condition, higher energy level, shinier coat, cleaner teeth, and normal bowel movements. They believe that their pet has fewer health problems (2).
- A raw diet is often considered to be **the ancestral diet** of pets (7,8). This is true for carnivorous cats. Several small rodents (6 to 12) a day is the ideal diet for each of our feline friends, but is impractical (7). However, dogs are omnivorous, carnivorous scavengers. They are physiologically adapted to eat everything: raw or cooked, meat, grain, vegetables, and rotten food (2,8), sometimes after rolling in it.
- RMBDs, as opposed to high protein cooked or extruded diets, are more biochemically complex with bioactive compounds. Raw diets are higher in antioxidants such as vitamin C, vitamin E, and some flavonoids (9). These may have some matrix effects and synergy that are beneficial to health (10). Heating food results in cooking toxins such as acrylamides and nitrosamines. These cause oxidative stress and are carcinogens (11). The effects of these compounds, interactions, or changes on the health of pets have not been studied.
- RMBDs may result in improved **immune function**. As 70% to 80% of each animal's immune system is located within the intestinal tract wall, it is not surprising that food has a major influence on immunity, and therefore on disease predilection (12). However, direct health benefits have not been shown (2).
- My observations suggest that most dogs and cats fed RMBDs have a good, **healthy body condition**; they are not overweight. This may be due to twice daily, portion feeding, or to the high protein, low carbohydrate content (7). The cost of the diet may be a factor as the food is too expensive for overfeeding. In addition, these owners usually give their dogs limited numbers of good quality treats, such as dehydrated meat pieces.

In my experience, commercial or home-prepared raw diets can be **medical problem solving** for dogs and cats that have developed food allergies, especially to common meats such as chicken and beef. These allergies usually manifest as vomiting and/or diarrhea (including soft stool), recurrent ear infections, and/or excessive scratching or licking (13). Most commercial raw pet food limited ingredient diets (LID) are made in the company's own grinding and mixing machines, and are generally not cross contaminated with other proteins. They are usually grain-free. The presence of bioactive peptides and antioxidants in RMBDs (9) may contribute to the response. Solving the food allergy problem by feeding a non-allergic food and treats is obviously the best approach, especially as these patients are corticoid resistant (13).

In some cats, diarrhea, intestinal discomfort, and/or flatulence can be caused by dietary carbohydrates. This is due to the feline carnivorous alimentary system being relatively short in length and transit time, along with limited capacity for starch digestion and monosaccharide absorption. Sugars that are not digested provide nutrients for microbial fermentation in the colon, increasing colonic acid (7). In cats which have developed diabetes, diets high in protein and very low in carbohydrates can be disease reversing or, at least, stabilizing (7). Feline RMBDs are typically higher in protein and lower in carbohydrate than most other cat diets.

This author could find no peer-reviewed articles that showed significant medical benefits from feeding RMBDs. There are many non-peer reviewed articles that suggest benefits to pets with food allergies, atopy, gastrointestinal disorders, idiopathic epilepsy, and cancer. However objective controlled studies are required.

In my experience, some dogs just "do better" on RMBDs. They are more active, lose excessive weight, have nicer breath, shiny coats, and normal feces. There is no good objective evidence that these diets improve the quality of the lives of dogs, or reduce the incidence of problems, but many pet owners firmly believe this to be so. It is very convincing in an individual patient when a food change makes a significant difference to the pet's health and well-being, in the absence of other changes or medications at the time. In these cases, the patient is its own control, and the owner and the veterinarian can be delighted and thankful.

Disadvantages of feeding a raw meat, complete and balanced diet to dogs and cats include:

- Concerns over whether the diet is **complete and balanced** according to the Association of American Feed Control Officials (AAFCO) Dog or Cat Food Nutrient Profiles (2,7), especially with small companies which use only whole food ingredients, avoiding synthetic nutrient supplements. It is difficult to get all the vitamins and minerals from natural ingredients into muscle-based food in an economical combination. Vitamins and minerals usually must be added to a diet of meat and vegetables, and the calcium to phosphorus ratio needs to be approximately 1:1. Only a few raw pet food manufacturers have done the feeding trials to achieve AAFCO certification.
- Concerns over **cost**.
- Concerns over **time**. Most RMBDs require more time than simply feeding dry pet food.

- Not all pets tolerate raw diets, even with some vegetables added.
- Concerns over **safety**.

Safety issues associated with feeding RMBDs to dogs and cats

Most dogs and cats handle the bacteria in raw ground meat most of the time due to the consistent acidity of their stomach fluid (14). Occasionally, a dog fed raw meat does develop diarrhea from its food, but more commonly enteritis occurs due to dietary indiscretion.

Raw food is not appropriate for any dog or cat whose immune system is suppressed because of significant disease or immune suppressant medications. Pets with severe disease such as moderately advanced heart, kidney, or liver dysfunction, diabetes, or cancer should not be fed a raw diet that may contain pathogenic bacteria. If the owner wants to feed a high protein diet for diabetes or cancer, for instance, some raw diets may be cooked and vitamins added just before feeding, or an HPP product could be fed.

Safety for the owners

Meat (especially ground meat) and eggs for animal or human consumption carry microorganisms (2,15). Raw pet food poses similar risks for pathogenic bacteria as do raw meat and eggs for humans (2,15). Freezing, freeze-drying, or dehydration results in a reduction in bacterial counts but viable pathogenic bacteria survive (2–5,15). This is of real concern if the household includes, or is planning, pregnancy, children under 5 y of age, the elderly, or any person who is immuno-suppressed (2,15,16). Information about safe meat handling is readily available from several sources (16,17). When safety is a concern for the owner, the family, or the pet, but a RMBD is preferred, an HPP food can be recommended (6).

In my many years of experience, I have found that most owners who feed raw commercial or home-prepared diets are informed and safety conscious. They practice safe food handling, dispose of their pets' feces with care, and wash their hands frequently. Everyone needs to practice personal, pet, food (for humans and animals) and fecal sanitary habits due to the numerous recalls of human and pet foods because of bacterial contamination (2,15,18,19); and the fact that some healthy humans, dogs, and cats excrete *Salmonella* and other pathogens in their feces (20,21). With respect to zoonotic transmission of intestinal pathogens, numbers matter. The keys to understanding are 2 perceptive phrases: "The solution to pollution is dilution" and "size (in numbers) matters." This is why washing with water, and a little soap, is usually effective, and is so widely recommended by public health experts.

Veterinarians do need to discuss both the possible benefits for the pet and the risks to the family's animals and humans inherent in feeding RMBDs, and record their advice in the pet's medical record.

Veterinary concerns and opportunities with clients feeding raw diets to their pets

Dog and cat patients fed raw diets raise some concerns for veterinarians:

- Safety for ourselves and our staff is the same as for our clients. We have to assume that all pets can be carriers of zoonotic microorganisms (20,21). Veterinarians and staff must engage in hygienic practices at all times.
- Our responsibility to advise our clients about safety, and potential problems for our patients. As we inform our clients about the risks of feeding RMBDs we need to record our recommendations and advice in the patient's medical record.
- Various veterinary associations have issued position statements discouraging the use of RMBDs including the CVMA, AVMA, WSAVA, and AAHA (22–25). The CVMA and the BSAVA recommend that veterinarians advise owners who feed RMBDs to ensure that "hygiene measures are in place to minimize the risk of the transmission of communicable disease" (22,26).
As a veterinary specialist, I decide which therapies and pet management approaches I discuss with my clients, and:
 - recommend a specific diet (e.g., LID diet, C&B pet food);
 - recommend medication use that is off-label (e.g., albendazole, allopurinol, amlodipine, apomorphine, atenolol, and so on);
 - advise owners who choose a strategy that I am unenthusiastic about (e.g., homeopathy);
 - refer the client to a colleague (e.g., for physiotherapy or acupuncture); or
 - disagree with but still support the client and the patient (e.g., owner declines rabies vaccination).

And in every case, I record my advice and the owner's decision in the pet's medical record, a copy of which is provided to the owner. I work with my clients so they have the best information for their decisions about the care of their pets.

Challenges and opportunities that patients on raw diets present to veterinarians

A surprising number of veterinary canine (15% to 25%) and feline (10%) patients are being fed RMBDs, and/or are being given raw meat, eggs, or treats in addition to their regular food (2,15). Clients have learned not to inform their veterinarian (and all too often veterinarians do not take a thorough dietary history) (27). Pet owners who choose to feed RMBDs have lower levels of trust in veterinary advice in general, as well as with respect to nutritional recommendations (27). These clients present opportunities for veterinarians, supportive and knowledgeable about the advantages and disadvantages of RMBDs, to provide veterinary services and advice to these generally well-informed and conscientious pet owners.

Clients who find that their veterinarian is only negative about RMBDs:

- Often omit or obfuscate what they are feeding their pet;
- Consider their veterinarian poorly informed about the best nutrition for their pet;
- May believe their veterinarian only cares about selling veterinary pet food and making money;
- May complain to their friends, in person and on social media, about their veterinarian;
- Distrust their veterinarian's advice about both medical and nutritional issues, ignoring or questioning veterinary medical recommendations; and/or
- Take their pet veterinary needs elsewhere (27).

This is bad medicine and poor business for these veterinarians. This negative attitude generates business for those practitioners who are informed about RMBDs. And these veterinarians are already very busy. I find that being supportive of RMBDs gives me credibility when I advise clients against feeding raw food for any of the reasons discussed.

In summary, some of the best informed and conscientious clients are feeding their dogs and cats RMBDs. While raw pet foods are not suitable for most owners or all pets, some dogs and cats are healthier on these diets. Raw diets are effective in the management of some medical problems, especially gastrointestinal dysfunction. They can also resolve inappetence, obesity, and poor hair coat. Veterinarians should inform clients about the safety issues for the family members and the pet. Every pet diet should be complete and balanced. The additional cost and time that feeding a raw diet involves also need to be considered. All this information must be recorded in each patient's medical record. In veterinary practices, thorough cleaning and disinfection with regard to pathogenic microorganisms is already carried out in our handling of all our patients and their elimination products. Nutrition and exercise are essential considerations as we strive to optimize the quantity and quality of each pet's life for the enjoyment of their family.

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