The Art and Science of Feeding Cats with GI Conditions

Diet is often seen as both the cause and the cure for cats with gastrointestinal (GI) conditions. Why?
As veterinarians, we can't always point to diet as being the entire cause of or cure for a GI condition because we often employ multiple therapeutic modalities to manage cats with GI conditions. However, what we feed cats is critically important to both the microflora living in the gut as well as overall GI tract health.

A balance of high-quality nutrients is critical to any good diet because the nutrients need to be digested and absorbed — something that can be much more difficult to achieve with poorer-quality ingredients. Digestibility is especially important in therapeutic GI diets because we're dealing with patients whose intestinal tracts may be compromised.

Why are therapeutic diets formulated for dogs and cats with GI conditions formulated differently for these two species?
The nutrient balance of a feline GI diet is different in several ways from a canine GI diet. Here’s why:

• **Cats are obligate carnivores** and require higher levels of protein and fat than dogs. Cats may also refuse to eat diets that are low in fat because of decreased palatability.

• **Cats tend to have different GI conditions than dogs.** In dogs with GI disease, we worry about the link between high-fat diets and conditions such as severe inflammatory bowel disease (IBD) and protein-losing enteropathy (PLE). However, we rarely see cats with PLE or other conditions requiring a low fat intestinal diet.

• **Cats don’t digest carbohydrate like dogs do.** Complex carbohydrates require a significant amount of intestinal enzyme activity and digestive capability. Cats are not designed to be significant carbohydrate consumers by virtue of their limited digestive enzyme capacity (due to both length of GI tract and number of enzymes available). In cats with GI disease, these carbohydrate-digesting enzymes may have been lost due to inflammation in the intestinal wall and changes in the lumen, resulting in carbohydrate malassimilation and increasing the potential for dysbiosis or diarrhea from carbohydrate intolerance.

When managing cats with small-bowel conditions, what do you look for in a therapeutic diet?
In the past, therapeutic GI diets for cats were formulated much like many therapeutic GI diets for dogs, with moderate levels of protein, highly digestible carbohydrate and reduced fat content — what some veterinarians refer to as a “bland” diet. This is not an appropriate strategy for most cats with severe or chronic small intestinal conditions — in fact, for cats with chronic enteropathies, lymphoma, allergies, or dysbiosis, carbohydrate digestion can be disrupted and the digestive tract can be easily overwhelmed. For the reasons cited above, I look for a feline GI diet with high total digestibility that contains high quality protein sources, moderate fat and a low amount of carbohydrate.

You’ve said that high-quality, balanced nutrients are critical to a good diet. How can veterinarians determine whether the diet they are recommending contains quality protein, fat and carbohydrate?
You have to trust that the manufacturer — based on its track record, its research, its quality control measures and, in certain instances, the nutritional information it provides — is providing accurate data. For example, some manufacturers publish digestibility test results that can help veterinarians determine just how available those nutrients are.

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Bovine Colostrum Enhances Adult Immune Health in Purina Study

The immune benefits of colostrum in newborn humans and animals is well recognized. But what about the potential for bovine colostrum supplementation to influence immune function in adult dogs? Purina researchers studied this question during a 48-week trial in Alaska.

**Trial description**

The trial was conducted with 36 adult dogs (Husky crosses with a mean age of 2.5 years) that were randomized into control and test groups.

- **During** an 8-week “pre-test” period, dogs in both groups were fed the same nutritionally complete diet.
- **At the end** of the “pre-test” period, serum samples were taken from all dogs to measure canine distemper virus (CDV) titers.
- All dogs were then given a canine distemper virus (CDV) booster vaccine as part of their routine vaccine schedule, then fed either a control or test diet for the next 40 weeks. The control group continued on the pre-test diet, while the test group received the same diet supplemented with 0.1% commercially obtained, spray-dried, bovine colostrum.
- Throughout the “test” phase of the trial, dogs in both groups were housed and fed individually, given water and exercised 3 days a week via sprint-racing as part of a sled team. Every 4 weeks, all dogs had blood drawn and fecal samples taken. CDV titers were measured every 8 weeks.
- **Two weeks** before the conclusion of the study, all dogs were given an exercise challenge designed to serve as a model for stress, since stress is known to depress immune function; the challenge consisted of a 10-mile vertical bar (n=12).* Mean values were significantly different from that of the control group (P<0.05).

**Trial results**

The study showed for the first time that feeding a complete and balanced diet supplemented with bovine colostrum enhanced the immune response in adult dogs, while maintaining their gut microbiota diversity and stability.

- While both groups showed a normal post-vaccination increase in CDV titers, dogs in the colostrum-supplemented group maintained post-vaccination titers for the entire 48-week period of the study. CDV titers in the control group fell back to pre-vaccination levels 16 weeks after the administration of the CDV vaccine.
- Dogs in the test group also had significantly higher fecal IgA levels at the end of the study (see Figure 1).
- Dogs in the colostrum-supplemented group showed stability in the microbial DNA patterns, reflecting a retention of predominant species and similar diversity of microbiota before and after the exercise challenge, while dogs in the control group saw a significantly lower consistency in microbial DNA patterns, suggesting an alteration in the relative proportion of species and a decrease in diversity of microbiota.

**Conclusions**

The Purina study showed that bovine colostrum can enhance the immune function in adult dogs. Purina® Pro Plan® Veterinary Diets EN Gastroenteric® Canine and EN Natural™ dry formulas are the only canine therapeutic diets formulated with bovine colostrum.

* Image 1: Fecal IgA Levels in Control and Colostrum-Supplemented Dogs.

While obtaining a nutrition history is one of the most important steps in managing patients with GI issues, the first answer an owner gives when asked what his or her pet is eating is always the most accurate one. I have found that probing a little further when a GI problem is suspected is worth the time.

**The diet history: persistence pays**

In our hospital, most patients presenting with GI complaints have experienced vomiting, diarrhea or inappetence for two to three days. However, the magnitude of a patient’s problem isn’t always uncovered during the initial exam room conversation. In our hospital, the veterinary technician starts the conversation with the owner and makes notes in a file I read before I enter the exam room. While these notes help me understand the reason for the visit, I have found that asking clients the same questions several different ways can yield additional insights.

I recently saw a client with a miniature schnauzer who told the technician that her dog had stopped eating and had not been herself for the past two days. When the technician took a dietary history, nothing unusual was mentioned. As I talked with the client, I learned that, in addition to experiencing appetite loss, the dog had vomited several times over the past week.

I conducted my examination and noted that the dog’s abdomen was somewhat painful, suggesting a possible diagnosis of pancreatitis or gastroenteritis. At this point, I specifically asked about “people” food, knowing that inappropriate diet is commonly associated with these diagnoses. I learned that my patient was actually eating people food “all the time,” thanks to the client’s mother, who fed the dog a little bit of everything she ate herself. The dog’s owner had no idea this could be detrimental.

Successful management of a patient with a GI condition can be dependent on a client’s willingness to speak freely about what he or she is feeding a pet—including the amount of “people” food the pet eats.

**Make the exam room a “no judgment” zone**

I always strive to make clients feel comfortable talking about their dogs’ dietary histories. If they don’t feel they are being judged, they are much more likely to be forthcoming.

I also try to give my clients options. While I discuss the possibility of a diagnostic workup when the cause of the problem is not clear, I always offer a “Plan B” if clients aren’t ready to take that big step. Plan B may include several different GI modalities, but it almost always includes transitioning the pet to a therapeutic GI diet. My “go to” for patients with suspected small-bowel GI conditions is Purina® Pro Plan® Veterinary Diets EN Gastroenteric® Canine or Feline Formula. These diets have high total digestibility and, in many cases, the diet change is a helpful necessity in my therapeutic plan. I stress to owners that if they don’t see improvement within a day or two, the pet needs to return for additional testing. By putting this advance plan in place and taking the time to explain what I am asking from them, I find that owners are more likely to comply. They like knowing that we’re a team that’s working together to help their pets. It’s also gratifying for me to see my patients improve. This is why I am so passionate about nutrition and my career.

**Key Takeaways**

- Canine and feline GI therapeutic diets are fundamentally different, with cats requiring higher levels of protein and fat and lower levels of carbohydrate than dogs.
- Feeding a complete and balanced diet supplemented with bovine colostrum can enhance the immune response in adult dogs while maintaining their gut microbiota diversity and stability.
- A client’s willingness to speak freely can be key to successful management of pets with GI conditions.

* Image 2: Total IgA Levels in the fecal samples collected at weeks 0 and 40 from dogs fed diets with or without bovine colostrum. Values are means, with their standard errors represented by vertical bars (n=12).* Mean values were significantly different from that of the control group (P<0.05).

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*Conclusion based in part on Kynetec 2017 Veterinary Landscape Canine Gastrointestinal Cases – diagnosis as percent of GI cases. Purina trademarks are owned by Société des Produits Nestlé S.A.