The Right and Wrong Ways to Treat Diarrhea

For a long time, mainstream veterinarians have taken an aggressive approach in treating diarrhea in pets. Thankfully, that's now changing. Here's what experience has taught me about what works best in treating otherwise healthy patients with diarrhea.

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STORY AT-A-GLANCE

- An encouraging article in a mainstream veterinary publication addresses the (mis)use of antibiotics to treat pets with diarrhea, and suggests nontoxic alternatives
- Thankfully, more veterinarians are realizing that antibiotics typically don't help, and often exacerbate chronic or repeated episodes of acute diarrhea in otherwise healthy animals
- There are many different nondrug approaches to treat diarrhea, including introducing whole food sources of prebiotics and fiber, and fecal microbiome transplantation (FMT)
- In treating otherwise healthy patients with diarrhea, in my experience, the most effective first step, and the step most likely to provide long-term resolution of the condition, is to address the diet

Recently I ran across an article in the AVMA (American Veterinary Medical Association) News that I hope suggests the beginning of a trend in veterinary medicine to back away from overuse of antibiotics, especially in pets with gastrointestinal (GI) issues such as diarrhea.[1]

According to the article, at the AVMA Convention this past July, Dr. Jennifer Granick, an associate professor of small animal internal medicine at the University of Minnesota College of Veterinary Medicine, suggested to her colleagues that treatment of diarrhea should focus not on killing (both bad and good) bacteria, but rather on restoring the health of the complex system of bacteria and other microbes (the microbiome) within the gastrointestinal tract.

> *"When I went to veterinary school, we were taught to use metronidazole [an antibiotic] for diarrhea, and what I hope to convince you of is that, maybe, we should be think rethinking our approach," Granick said during her presentation, titled "First Do No Harm: A New Approach to Diarrhea in the Dog and Cat."*[2]

In fact, these days the last thing Granick tries when treating most patients with diarrhea is antibiotics.

> *"That's not to say there aren't antibiotic-responsive diarrheas out there. There absolutely are," she said. "But antibiotics are the last thing I do, which is really different than when I first started practicing because it was the first thing I did."*

Antibiotics for Diarrhea Can Do More Harm Than Good

A healthy gut microbiome is essential to overall good health, and as Granick highlighted in her presentation, the microbes found in the GI tract of dogs and cats have several important jobs to do. Specifically, they "create defensive barriers against potential pathogenic organisms, aid in nutrient breakdown and energy release from ingested foods, provide nutritional metabolites for enterocytes, help regulate immunity, and metabolize substances the host can't, such as drugs."[3]

When it comes to the use of antibiotics to treat gut issues, a growing body of research shows they have little or no positive impact in pets with acute diarrhea and hemorrhagic diarrhea syndrome (profuse bloody diarrhea). Evidence suggests, in fact, that antibiotics can compromise the microbiome, similar to infection, inflammatory disease, and poor diet. In other words, these drugs can do more harm than good as a treatment for diarrhea.

Prebiotics as a Potential Alternative to Antibiotics

Granick suggests replacing antibiotics with prebiotics in the form of high-fiber pet diets and cilium additives, along with probiotics.

Before we get to that point, however, it's important to understand that when pets are fed a lifetime of whole, fresh, nutritionally optimal foods, in many cases their digestive tracts function normally through old age without the need for continuous supplementation with gut health products.

Adding a few gut health supplements to ultraprocessed diets is the equivalent of putting lipstick on a pig (no offense to pigs) or applying a coat of paint to cover cracks in the walls of a house sitting on a crumbling foundation. And in the case of prebiotic supplements, they can make a bad situation worse because they feed the growth of intestinal bacteria.

Prebiotics come in food or supplement form. Prebiotic supplements added to pet food lack the whole food matrix, so they are only complex sugars, including:

- Fructooligosaccharides (FOS), which is produced from the natural fermentation of sugar cane
- Inulin
- Oligofructose, a breakdown product of inulin

What many people don't realize is that unlike probiotics, prebiotic supplements aren't right for every pet. Marketing claims often position them as feeding only friendly bacteria in the digestive tract, but studies show this isn't the case — prebiotics nourish unhealthy bacteria, including Klebsiella overgrowth and yeast as well.

For an animal with a very healthy digestive tract, prebiotic supplements probably won't do any harm. But many pets today have GI conditions like inflammatory bowel disease (IBD), leaky gut, small intestinal bacterial overgrowth (SIBO), and other issues.

This means the good-to-bad bacteria ratio in the GI tract is out of balance, and we certainly don't want to feed potentially pathogenic bacteria or yeast with large amounts of prebiotics. Pets with yeasty guts have a significant worsening of their condition when fed prebiotics, because sugar feeds yeast, and prebiotics are complex sugars.

In my opinion, however, if you feed a balanced, commercial raw or gently cooked diet or prepare balanced homemade meals for your otherwise healthy pet and rotate recipes frequently, you don't need to add prebiotic supplements unless your integrative veterinarian specifically recommends them for some reason.

5 Whole Food Sources of Prebiotics

While all pets benefit from whole foods containing prebiotic fibers, not all benefit from prebiotic supplements. The ideal way for your furry family member to get all the dietary nutrients her body requires, including prebiotics, is in fresh whole foods offered as a part of a nutritionally optimal, species-specific diet.

It's important to note that while all prebiotics are fiber, not all fiber has a prebiotic effect on friendly bacteria.[4] To be classified as a prebiotic the fiber must:

- Resist gastric acidity
- Resist absorption in the upper GI tract
- Be fermented by intestinal flora
- Stimulate the growth or activity of beneficial bacteria (and not promote the bad guys)

Prebiotic foods contain the fibers probiotics utilize in a matrix of other nutrients and phytochemicals and can be very beneficial for pets. Great prebiotic foods you can offer your pet include:

1. **Jerusalem artichokes (also called Sunchokes)** — These prebiotic superfoods can be sliced or cubed and make excellent training treats.
2. **Dandelion and arugula greens** — It's fine to harvest dandelions from your yard, just make sure they're spray-free.
3. **Jicama** — Another great option to cube and treat.
4. **Okra**
5. **Asparagus** — Asparagus is also an excellent source of vitamin K, A, B1, B2, C, and E, along with folate, iron, copper, fiber, manganese, and potassium.
6. **Apples** — Apples also contain powerful antioxidants and vitamin C. Serve apple slices to your pet, but never the core or seeds.
7. **Bananas** — Green bananas boast some of the best resistant starch and pectin and promote healthy intestinal well-being.

All the above prebiotic foods contain inulin and fructooligosaccharides (FOS) in a whole food matrix which includes other types of fiber and nutrients that act as fertilizers for the good bacteria in your pet's gut without the risk of fostering SIBO, as prebiotic supplements can.

However, if you have a pet with SIBO or an overgrowth of E.coli in the GI tract, one supplement can be very beneficial; a specific 'phage prebiotic' called PreforPro.

When bacteria ferment prebiotic foods in the large intestine, short-chain fatty acids (SCFAs) are produced. SCFAs are highly beneficial to your pet's gastrointestinal tract. They provide cells with energy, keep things moving through the intestines, and reduce both inflammation and overgrowth of potentially pathogenic bacteria.

The above fresh foods can be gently steamed or minced and added to a bland diet, or used as treats throughout the day.

Another Alternative: Fecal Microbiome Transplantation

Granick also mentions fecal microbiome transplantation (FMT) as another potential option vs. antibiotics to treat diarrhea but cautions that, “Screening your donors is so important, not only for fecal pathogens but also making sure they don’t have a long history of antimicrobial use.”

As I explained earlier, the microbiome is the collection of bacteria and other microorganisms that animals carry on their bodies. The GI microbiome of mammals consists of a highly diverse community of microorganisms, primarily bacteria (numbering in the trillions. A growing body of research suggests that FMT in animals with GI conditions can provide significant benefits.

For example, diarrhea and other GI issues are a common problem in kenneled dogs. In 2016, Florida veterinarian Dr. Kevin Conrad worked with a guide dog group to address the issue in the animals the group breeds and raises as working dogs. His goal was to find a less costly and time-consuming way to treat the dogs that didn’t involve the use of antibiotics, which often exacerbate the problem.

> *"We see 250 dogs a year and there were a lot of repeat offenders with symptoms not going away," Conrad told the Bradenton Herald. "We'd either repeat antibiotics or adjust their feeding. It could take days, weeks or months to get one dog feeling better and I knew there had to be an easier process."*[6]

Conrad took a simple approach to his FMT trials. He identified donor dogs without digestive issues who seemed “naturally inclined not to get sick,” froze their stool samples, cultured them to make sure the right bacteria were present, liquefied the samples in a sterile saline solution, and started performing fecal transplants on the guide dogs.

> *"Immediately we were having an 87% success rate after one treatment," said Conrad. "For those needing a second treatment, the success rate is 93% and there has not been one that has had diarrhea since."*

Next, Conrad decided to backtrack from diarrhea puppies to their moms and discovered high levels of bad bacteria in pre-litter females. He began doing fecal transplants on pregnant mothers who then gave birth to puppies without diarrhea issues. Conrad effectively moved beyond treating the problem to preventing it, and now he’s eager to see if the transplants prevent diarrhea throughout the dogs’ lifetimes.

While Granick believes FMT to be a “relatively new procedure,” it’s in fact an ancient practice many cultures around the world have used to effectively treat outbreaks of potentially life-threatening GI infections. Simply stated, it replaces unhealthy or infected microbiomes in diseased humans with healthy ones.

The procedure is also being used in top human hospitals around the world to help people recover from C. Diff infections and other potentially devastating intestinal disorders, with impressive success.[7]

I've personally used FMT for many patients dealing with severe GI infections and chronic conditions over the last several years, with incredible success. You can learn about one of my patients here: Felix's story.

The Wrong Approach to Treating Large Bowel Diarrhea

Interestingly, another article I came across in the veterinary publication Clinician's Brief reinforces Granick's point with regard to jumping right to antibiotics treat chronic diarrhea in otherwise healthy pets.

A 3.5-year-old male Irish Setter named Edward developed episodes of large bowel diarrhea that grew progressively worse. He was treated first with one trial of fenbendazole (an anti-parasitic), followed by two trials of metronidazole (antibiotic), and a trial of tylosin (another antibiotic), but his condition remained "without resolution or consistent improvement."[8]

Since it has been established in veterinary medicine that dogs with chronic idiopathic (no determined cause) large bowel diarrhea often respond to changes in dietary fiber, and since fiber can more broadly support gut health, next, Edward was given a fiber supplementation trial using unflavored psyllium husk added to his hydrolyzed diet. Thankfully, the dog did get relief from his diarrhea with the psyllium fiber.

There were several other things going on with Edward that I won't get into here, but suffice to say, while I'm thankful the added fiber resolved his diarrhea, at least temporarily, my approach would have been significantly different given what he was being fed (an ultraprocessed kibble diet).

Once I determine an animal is otherwise healthy but for chronic or repeated episodes of diarrhea, I always begin at what is, to me, the most obvious starting point — the diet. I never recommend adding supplements to a poor-quality diet. Instead, I initiate a gradual transition to a higher quality, non-reactive diet as a first step. What happens after that depends on the pet's response to those dietary changes.

Supplements (including fiber), and/or medications, and/or FMT may or may not be necessary once an animal is consistently eating the diet he or she was designed to eat.

Sources and References

[1, 2, 3] AVMA News, September 12, 2022

[4] Nutrients, 2013; 5(4):1417

[5] Birt, D.F. et al. Resistant starch: promise for improving human health. Adv Nutr 2013 Nov 6;4(6):587-601

[6] Bradenton Herald, March 22, 2016

[7] Time, November 28, 2017

[8] Clinician's Brief, November/December 2021