

How to Avoid a Common but Very Damaging Veterinary Treatment

This often overused intervention can seriously harm your dog's health and lead to a compromised immune system, inflammation, a change in metabolic activity and obesity. Help your dog recover and thrive, and at the same time, improve allergies, diabetes, mood and behavior disorders.

Analysis by Dr. Karen Shaw Becker

STORY AT-A-GLANCE

- The health of your dog's gut microbiome reflects her overall health, because 70% of his immune system resides in his digestive tract
- There are many factors that can have a negative impact on your dog's microbiome; one of the worst is antibiotics, which are routinely overprescribed in veterinary medicine
- To maintain a healthy gut, most dogs today can benefit from supplementation with beneficial bacteria, including probiotics and fermented foods
- When selecting a probiotic supplement for your dog, make sure it's high quality and formulated specifically for pets

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Believe it or not, about 70% of your dog's immune system, which is crucial in defending the body against disease, resides in her gut. That's why a healthy gut microbiome is essential to her overall health and longevity. Sadly, lots of dogs today have compromised immune systems.

There are many causes of lowered immune status in today's canine companions, but most fall into the category of age- or lifestyle-related stressors or naturally occurring stressors. Some stressors are unavoidable, and each plays a role in reducing the ability of your dog's immune system to defend her body against foreign invaders. This results in increased susceptibility to infections, autoimmune disorders, and diseases, including cancer.

Given that your dog's immune system will be affected by various forms of stress throughout her life, and since most of the immune system resides in the gastrointestinal (GI) tract, it's easy to see why the health of her gut microbiome is so crucial to her well-being.

Factors That Influence the Health of the Gut Microbiome

The microbiome is composed of billions of organisms, including viruses, fungi, protozoa and of course, bacteria. There are two broad categories of bacteria that reside in your dog's gut:

- Friendly (good) bacteria that promote the normal, healthy function of the GI tract and therefore, the immune system
- Opportunistic or potentially pathogenic (bad) bacteria that can disrupt GI function and compromise immune function as well

When your dog's gut microbiome is in good shape, it means there's an optimal balance of good-to-bad bacteria present. When an imbalance occurs that encourages an overgrowth of pathogenic bacteria or the obliteration of the friendly players, your dog will often develop problems with digestion first, followed eventually by other health conditions resulting from the inability of his immune system to function as it should.

The gut microbiome can be influenced by several factors — everything from emotional stress and environmental chemicals to an unhealthy lifestyle. Some of these include:

- Sudden change in diet
- Vaccinations, dewormers and medications
- Poor-quality or biologically inappropriate diet
- Surgery
- Pica (eating non-food items such as feces, sticks, rocks, etc.)
- GI disease (e.g., inflammatory bowel disease)
- Drinking contaminated water
- Travel or boarding
- Exposure to fertilizers, insecticides, pesticides and chemicals in the diet or environment
- Emotional stress (often caused by a change in routine or environment)

When physical or emotional stress upsets the bacterial balance in your dog's digestive tract, it can trigger a cascade of nutritional problems, including poor nutrient absorption and intermittent or chronic diarrhea. It also opens the door to leaky gut syndrome, which sets the stage for a host of other health problems, from allergies to autoimmune disease.

Antibiotics Wreak Havoc on the Microbiome

Among the most powerful influences on your dog's gut bacteria are antibiotics. These drugs are designed to kill harmful bacteria that cause illness, but in the process, they also kill healthy bacteria. Even worse, antibiotics are overprescribed in both human and veterinary medicine.

Laura Cox, PhD, of New York University's Langone Medical Center, has studied the impact of early-life antibiotic therapy on body composition.

According to Cox, several researchers have proved that altered microbiota (the collection of microorganisms that live in and on the body), which can result from antibiotic use, can cause obesity through processes that create inflammation or change metabolic activity in the gut. These processes can result not only in obesity, but also diabetes and fatty liver disease.¹

According to Cox, research suggests that antibiotics disrupt early development of microbiota. Studies involving production animals that received low doses of antibiotics to promote growth show that the earlier in life the antibiotics are given, the more profound the effect.

Similar studies conducted with mice have produced an increase in fat mass. Cox's studies have shown that exposure to antibiotics in early infancy changes the composition of the microbiota, leaving it more vulnerable to disruption. In the mice studies, the animals not only gained weight, but they also accumulated more visceral and liver fat. This is just one example of the long-term repercussions of antibiotic administration early in life.

In my experience, many veterinarians are entirely too quick to prescribe antibiotics for health issues that can (and should) be treated more safely and effectively by other means.

Unless your dog has a confirmed bacterial infection (not a "probable" bacterial infection) and if necessary, your vet has performed culture and sensitivity testing to determine which drug will be most effective, it's bad medicine to put your pet on antibiotic therapy unless there is no other means of resolving the infection.

Supplementation With Beneficial Gut Bacteria

Because your dog's gut microbiome must maintain a healthy level of good bacteria to support the immune system — and because dogs today deal with a variety of stressors throughout their lives — in my experience, it's a good idea to supplement their diets with a variety of beneficial bacteria (**probiotics**) to discourage pathogenic bacteria from overtaking the GI tract.

When your dog's gut bacteria are in balance with the right amount and type of healthy bugs on board, there is symbiosis. Good things happen inside the body — vitamins are made, vegetable fiber is processed efficiently, harmful bacteria are kept in check, and toxins are well-managed and effectively excreted. A healthy GI tract is selective about what is absorbed by your dog's body. Nutrients are taken in and non-nutritive substances, including toxins, are kept out.

We tend to view probiotics as being primarily beneficial for digestive issues. But studies in both humans and pets indicate the therapeutic effects may reach far beyond the gut to a wide range of health conditions, including allergies, diabetes, obesity, liver disease, and mood and behavior disorders.

Choosing a High-Quality Probiotic for Your Dog

When selecting a supplement for your dog, avoid human probiotics, and probiotics added to commercial pet food. Probiotic formulas used by humans are developed specifically to fortify the bacterial species found in the human GI tract. Pets have specific strains of bacteria unique to them, so they do best with a customized probiotic.

A few strains have been shown to benefit both people and pets, and emerging research suggests sporebiotics may also be beneficial for animals, but no matter the supplement, it's important to evaluate its viability. The bacteria in a probiotic must be live and able to reproduce for it to be maximally beneficial. That's why commercial pet foods containing a small amount of potentially inactive probiotics aren't worth the money.

Tests on dog foods claiming to contain probiotic microorganisms showed the manufacturing process kills too many of the live bacteria, rendering the probiotic effect useless by the time the food is packaged and shipped. When selecting a high-quality pet probiotic, look for the following five important characteristics:

1. The correct strains of bacteria beneficial for pets, not people
2. Easy to give to your dog
3. The ability to survive the acidic environment of your dog's stomach
4. Enough live organisms to colonize the intestines
5. Product stability under normal storage conditions

Rotating through different types of probiotics and using a variety of products that offer different strains is a smart strategy for diversifying your pup's microbiota over time, in addition to focusing on nutritional diversity.

Your dog should receive the majority of her nutrients from a fresh, whole food diet that is diverse and contains a variety of prebiotic fibers, which also nourishes a healthy gut. Adding fermented veggies, fermented goat's milk, coconut kefir or kombucha to her diet is another great way to nourish the microbiome, if she'll eat these zesty additions.

Fermented foods provide a wider variety of beneficial bacteria than probiotic supplements and far more of them. Allowing your dog to have ample access to healthy soil is another great way to help keep the microbiome in check.

If you're interested in evaluating the health of your pet's microbiome, AnimalBiome can perform individualized evaluations.

Sources and References

¹ [dvm360 October 1, 2014](#)
