

## How to Support Your Pet's First Line of Defense

Want a back-door approach to help keep your pet healthy and protected from foreign invaders? Many pet parents don't realize the power in this strategy that reaches a whopping 70% of their pet's immune system. Just make sure the approach you choose meets these five criteria.

**Analysis by Dr. Karen Shaw Becker**

### STORY AT-A-GLANCE

- When your dog's gut is healthy, he's healthier in general, because the majority of his immune system resides in his digestive tract
- There are several factors that negatively influence the gut microbiome, and many are almost unavoidable in today's world
- One of the biggest negative influences on the microbiome of all animals (including humans) is antibiotics, which are massively overprescribed in veterinary medicine
- Dogs' microbiomes benefit from a highly diversified diet. If you aren't rotating many different foods into your dog's diet, supplementation with beneficial bacteria in the form of probiotics and/or fermented vegetables may be beneficial
- When selecting a probiotic supplement for your dog, make sure it's high quality and formulated specifically for pets, and rotate strains frequently

***Editor's Note: This article is a reprint. It was originally published June 13, 2022.***

If you're a pet parent, you probably know how important your dog's immune system is to her overall health. But did you know that around 70% of her immune system resides in her gut? That means the healthier your dog's gut microbiome, the healthier she'll be overall, because it's her immune system that defends her against disease.

There are many causes of low- or malfunctioning immune systems in dogs today, 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 compromising 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 her immune system resides in her gastrointestinal (GI) tract, it's easy to see why the health of her gut microbiome is so crucial to her general well-being.

## Factors That Influence Microbiome Health

There are two categories of bacteria that reside in your dog's gut:

- Friendly (good) bacteria that promotes the normal, healthy function of the GI tract and therefore, the immune system
- Pathogenic (bad) bacteria that disrupts gastrointestinal function and compromises immune function as well

When your dog's gut microbiome is healthy, it means there's an optimal balance of good-to-bad bacteria present. When an imbalance occurs that allows an overgrowth of pathogenic bacteria, problems often develop in the GI tract first, followed eventually by other health conditions resulting from the inability of the immune system to function optimally.

The gut microbiome can be influenced by several factors — everything from emotional stress to an unhealthy lifestyle. Research has demonstrated these factors can negatively impact a pet's microbiome:

- Sudden change in diet creating GI upset
- Vaccinations
- Ultraprocessed diets, and lack of dietary diversity
- Surgery and prescription medication (including non-steroidal anti-inflammatories)
- Pica (eating non-food items such as feces, sticks, rocks, etc.)
- GI disease (e.g., inflammatory bowel disease)
- Drinking contaminated water or water treated with fluoride and chlorine
- Flea, tick, and heartworm chemical preventives
- Ingestion of fertilizers, insecticides, or pesticide residues in pet food or the environment
- Emotional stress (often caused by a change in routine or environment, such as travel or boarding)

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 (dysbiosis) in which partially digested amino acids and allergens escape from the GI tract and enter the bloodstream. This in turn can create a host of other health problems, from allergies to autoimmune disease.

## Antibiotics and Other Drugs Damage the Microbiome

Among the most powerful influences on gut bacteria are antibiotics. These drugs are designed to kill harmful bacteria that cause illness, but they work indiscriminately, meaning they kill healthy bacteria right along with disease-causing bacteria. In addition, 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.<sup>1</sup>

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.

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

## **Some Dogs Benefit From Probiotic Supplementation**

Ideally, your pet's microbiome should be healthfully maintained by feeding a wide variety of minimally processed foods containing an abundance of prebiotic fibers. Animals were meant to have a wide variety of nutritional diversity from many different food sources, which in turn creates microbiome diversity.

Pets eating the same, highly processed "fast food" day after day, month after month, are at high risk of ongoing gut issues. Rotating brands of foods, proteins and types of foods is the best way to diversify your pet's microbiota. Using fresh food treats and toppers is another easy way to help build gut health.

If you are unable or unwilling to diversify your pet's microbiome by diversifying their diet, then at a minimum, using a probiotic supplement may be of benefit.

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, if your pet is lacking a wide variety of different foods in their diet, it's a good idea to supplement their regular meal with beneficial bacteria (probiotics).

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. A healthy GI tract is selective about what is absorbed by the body. Nutrients are taken in and non-nutritive substances, including toxins, are filtered 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.

## Selecting a High-Quality Probiotic for Your Dog

When choosing 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 beneficial. That's why commercial pet foods containing 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. Thankfully, research shows even dead probiotics may offer some benefit, but obviously the point of spending money on a supplement is for it to maximize health. 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

And remember that your dog should receive most of her nutrients from a fresh, whole food diet that is nutritionally optimal and species-specific. Also consider adding some fermented veggies, kefir or kombucha to her diet, if she'll eat them. Fermented foods provide a wider variety of beneficial bacteria than probiotic supplements and far more of them.

Thankfully, if you're interested in evaluating your pet's gastrointestinal health, there are many companies offering an array of gut analysis services you can do at home, including **Innovative Pet Labs**, which offers a leaky gut test, inflammation and gut immunity testing, digestion and detox testing, and a comprehensive GI microbiome analysis.

These insightful diagnostics allow pet parents to identify the root causes of their pets' GI issues, so an effective long-term treatment plan can be created.

### Sources and References

[PetMD March 25, 2016](#)

<sup>1</sup> [dvm360 October 1, 2014](#)

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