

# Do grain-free diets *really* cause canine heart disease?

By Katie Kangas, DVM, CVA, CVCP  
Integrative Veterinary Care, San Diego, CA

Recent FDA headlines are causing panic and confusion for pet parents and even for veterinarians.

**This alarming news is being mis-represented, and the connection between grain-free dog foods and heart disease isn't clear-cut or even proven.**

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## “Link” doesn't mean “cause”

It is very important to understand that a *link* or *correlation* does not equate to a *direct cause*. First of all, there are numerous chronic diseases and health conditions on the rise in both pets and people. It is no secret that heart disease, cancer and autoimmune diseases are being seen far more frequently these days, in both humans and our animal companions. This can be attributed to a numerous combination of factors, including progressive levels of processed foods, exposure to toxins, chronic stress, overuse of vaccines, overuse of antibiotics causing a deficient microbiome status (for all of us), etc.

Secondly, grain-free pet foods are much more popular (for good reason) than ever before. With more pets eating grain-free foods, and more disease being identified, it can appear to be linked with just these two factors alone. But there is so much more to the story.

In specifics with pet nutrition links to heart disease (DCM), recent research suggests that diet is a factor in only about 30% of dogs with DCM. Many dogs with DCM do not improve with taurine supplementation. This demonstrates that multiple influences are involved with the DCM disease process, and that the exact role and impact of dietary taurine appears complex and is not yet fully understood.

## What is taurine?

Taurine is an amino acid found primarily in meat. Most amino acids are mainly used to build proteins, but taurine plays a unique role in many of the body's functions. Notably, taurine is required for the proper function of muscle tissues -- especially the heart. It is also vital for the eyes and brain, and is a component of bile, which breaks down dietary fat. Additionally, taurine has beneficial antioxidant and anti-inflammatory properties.

## FDA claims

The news has shown many recent headlines: “Grain-free diets linked to heart disease in dogs!” These widely publicized claims have arisen from speculations that foods which negatively affect taurine status are leading to taurine-deficiency dilated cardiomyopathy (DCM) in dogs. Foods that contain high levels of peas, lentils and potatoes are identified by the FDA as potential risk factors, and these common ingredients are found in many pet foods that are formulated and marketed as “grain-free”. But is it really true? Are grain-free diets causing heart disease in our dogs?

## Quality matters

Diets that include high quality animal proteins, and that aren't heat-damaged, should provide adequate taurine.

Conversely, low quality proteins or excessively heat-treated foods will be poorly digested, thereby reducing taurine availability.

With this in mind, it is becoming increasingly clear that the issues implicating "grain-free" pet foods as a potential health risk are associated with the following factors:

1. Most **low quality** grain-free foods have **high** concentrations of plant-based proteins, such as lentils, peas and other legumes, as well as potatoes.

2. Most pet foods are heavily processed and heated at extremely high temperatures, which alters the bioavailability of taurine.

Taurine is not normally a requirement in canine diets, since dogs are generally able to synthesize it from other amino acids found in proteins within meat, poultry, fish and eggs. It appears however, that certain breeds may be more prone to taurine deficiency issues than others. (Unlike dogs, cats *must* consume taurine in their diets, as they cannot produce their own.)

It is important to note that taurine is found naturally in animal-based proteins – such as meat, fish and eggs, but *not* in plant-based protein sources. It is also important to note that the high temperatures and extreme heat used to process many pet foods alter the bioavailability of taurine.

### The microbiome is involved!

Another factor that plays a major role in taurine deficiency involves the dog's gut microbiome. It appears that bacterial microbes in the gut have a significant impact on the processing and utilization of this important amino acid. When the microbiome is shifted out of balance, it can create an environment in the gut that favors types of bacteria that degrade taurine, making this amino acid less available to the dog's body, including his muscle tissues and heart.

The balance and diversity of the microbiome is affected by many factors, including the ingredients consumed in food, such as higher levels of carbohydrates that break down into sugars. In addition, the microbiome is greatly affected by chronic inflammation in the intestinal tract, a problem that is now commonly identified in dogs (and people).

Chronic inflammation in the lining of the intestines leads to what is commonly referred to as "leaky gut syndrome", which means gut integrity is compromised, allowing the passage of components through the normally protective gut barrier and directly into circulation with the rest of the body. This problem can lead to numerous disease issues, but also greatly affects the microbes crucial to digestion and food processing, as well as immune function, brain function and overall health.

### The problem is multi-factorial

A recent report<sup>1</sup>, compiled by experts in holistic veterinary medicine and canine nutrition, explains that the link between grain-free foods and heart disease is likely a multifactorial problem related to alterations in gut flora, perhaps arising from high percentages of legumes in lower quality "grain-free" diets, that can change taurine absorption and alter its digestibility and bioavailability.

Additionally, the report<sup>2</sup> states the problem may also be related to the processing of protein sources. As discussed above, using high heat to process proteins causes altered digestion, creates pro-inflammatory mediators -- leading to inflammation in the gut and body -- and leads to a shift in microbiome bacteria. This type of shift can promote an intestinal environment that favors increased numbers of taurine-degrading bacteria.

As you can see, implying that “grain-free foods cause heart disease” is far too simplistic. Many factors are involved in this issue, from a diet’s quality, ingredients and processing to the health of the dog’s microbiome. In other words, feeding your dog a grain-free diet does not mean they are going to develop heart disease!

### **Glyphosate contributes to the problem**

Although we now understand more about the critical role of gut microbes and the body’s microbiome, we are also realizing that modern methods of agriculture and food processing are proving detrimental to microbiome health and diversity. Healthy gut bacteria are dramatically altered by diets of heavily processed foods, preservatives, and increasing levels of toxins such as glyphosate, which is the main ingredient in Monsanto’s Round-Up product. Interestingly, not only is glyphosate a toxin, but it is also technically an antibiotic, as it interferes with enzymatic pathways in many bacteria. It’s easy to see why this herbicide affects the body’s beneficial bacteria and microbiome status.

**It is interesting to note that lentils and peas contain some of the highest glyphosate levels, followed by oats, corn, soy, wheat and potatoes<sup>3</sup>.**

While glyphosate is recognized as an antimicrobial as well as an herbicide, it is also known to break down the tight junctions of the cells that form the lining of the gut, or gastrointestinal tract. This breakdown of cellular junctions degrades the gut’s intelligent barrier system, leading to leaky gut syndrome, which also allows in more toxins (beyond glyphosate).

In other words, chronic exposure to glyphosate and other toxins is leading to gut inflammation, a depletion of the numbers and diversity of gut microbes, and an alteration in digestion and the immune response to components in food.

### **Making food choices for your own dog**

This same report mentioned in the article offers sensible recommendations when making food choices for your dog:

1. Buy good quality food that contains plenty of animal-based protein like meat, fish and eggs as the top ingredients.
2. Avoid pet foods that rely on legumes or potatoes as their *primary* ingredients.
3. When using whole food ingredients like legumes and lentils in a home-prepared diet, soak and/or sprout them for optimal nutrition and digestibility.
4. Look for diets that are minimally processed to preserve naturally occurring nutrients such as taurine, as well as many other amino acids, vitamins and minerals.

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<sup>1</sup> [..\Downloads\Dilated Cardiomyopathy and Diet in Dogs.pdf](#)

<sup>2</sup> [..\Downloads\Dilated Cardiomyopathy and Diet in Dogs.pdf](#)

<sup>3</sup> <https://hrilabs.org/>