

Grain Free Diets and Cardiomyopathy A Recurring Tale of Poor Manufacturing



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VRS is committed to offering only the best in evidence-based products. Recent broad statements indicting grain-free diets fail to recognize the broader nutritional context and the innovation that Transparent Nutrition provides. We want to be sure that our valued partners are aware of our position on grain-free diets.

We understand the widespread concern about grain-free diets as a potential cause of dilated cardiomyopathy (DCM). There have been over 77 cases recently brought to the attention of the FDA-CVM, and in these cases 42 of the 77 were being fed a grain free diet. All of these foods were found to contain adequate nutrients including taurine, and therefore causality has not yet been shown. As nutritionists, we have seen whole blood taurine levels just under normal values with dogs on low protein, home-prepared diets where the echocardiogram is absolutely normal. There is much more here than just grain-free diets. There is likely a “perfect storm” of genetic predisposition, a GI microbiota alteration or difference, and problematic pet food formulation/processing.

The current controversy surrounding taurine sounds new, but in actuality, episodes of DCM were seen in the early to mid-2000s with rice bran and lamb-based diets. A similar scenario was identified in Newfoundland, where atypical DCM breeds developed the disease after being fed low protein diets, not supplemented with methionine/taurine, high in insoluble and soluble fiber and large amounts of ash. This sounds familiar to the problem today, in that the same features are present in the implicated diets, except this time they are grain-free. It is important to note that after the last episode in the 2000s, when investigators tried to recreate the disease, they were unsuccessful. This demonstrates that unique relationships between the dog, the microbiota in the GI tract, and the processing of the food are more important than the ingredient list. It is important to consider all of these details when analyzing the causative agent(s) in these DCM cases. Any attempt to make blanket statements about a broad feature of a diet (eg. Grain Free) in relation to DCM, is not sound, evidence-based epidemiology.

The implicated dry diets are from 3 manufacturers, based on available information and have been below 26% as fed protein (estimated as <65 grams per 1000 calories) provided by a mix of meat and plant protein. In other words, these were **moderate to lower protein** diets. The quality of the protein is also directly related to the sourcing. Although 26% as fed protein in a dry kibble would be considered adequate, many companies without nutritional expertise will not check the

specific amino acid content of the diet – nor do they check on the quality of those amino acids, which is difficult and expensive.

Moreover, ash has not been discussed in these newer cases – but **ash content** is directly related to the amount of bone in the diet, which is not a particularly good protein source. The higher the ash content is in a diet usually means more bone-related protein in the food than actually meat protein – which is something we should all be more cognizant of when choosing pet foods. Unfortunately, this information is hard to obtain without calling the manufacturer. Additionally, methionine and cysteine, which are sulfur-containing amino acid precursors to taurine, can become oxidized during processing such that the availability will not be 100% of what is in the product. In many cases companies will **add methionine** to the diet to ensure the methionine requirement is met for protein synthesis but also to provide the **primary precursor to taurine synthesis**, thereby ensuring appropriate synthesis of this quaternary amino acid derivative that is important for heart health.

In dogs, taurine is conjugated to bile acids for fat absorption, which creates a situation whereby ‘taurine wasting’ may occur. Higher insoluble and soluble fibers, primarily from peas and a variety of beans/legumes, may be influencing the current reported cases in two ways:

- 1) Soluble fiber may dramatically increase the bacteria in the GI tract that consume taurine, making it unavailable for reabsorption in the distal small intestine.
- 2) Fiber may induce a unique interaction in the actual pet food itself making taurine unavailable for absorption in the GI tract. Consider the fact that many of the grain-free diets reported had high amounts of legumes and legume-derived protein. Potatoes, and other grain-free carbohydrate sources, have been used safely for years especially in novel protein diets.

This is a very frustrating problem with no immediate answers. We believe the appropriate nutritional approach involves **using high quality protein, optimal soluble and insoluble fiber content, and adding additional methionine or taurine when necessary. Transparent Nutrition utilizes these foundational principles.**

As veterinarians, we hope our community can recognize the scientific and public relations dangers in demonizing a certain ingredient or diet type. Neither grain-containing or grain-free diets are inherently bad - it depends on the diet and the dog being fed. **We formulated our diets because the ingredients were those best equipped to serve your patients and to provide sound nutrition.** We support our diets with rigorous quality control testing which is available to you and your consumers. It is time that we examine the pet food industry broadly and increase veterinary nutrition voices in formulation to ensure the quality of pet food ingredients.