

## It's Not Just Grain-Free: An Update on Diet-Associated Dilated Cardiomyopathy

[T vetnutrition.tufts.edu/2018/11/dcm-update](https://vetnutrition.tufts.edu/2018/11/dcm-update)

by Lisa M. Freeman, DVM, PhD, DACVN

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You may have read my June 4 post, “A broken heart: Risk of heart disease in boutique or grain-free diets and exotic ingredients.” This post had more than 180,000 page views in the first week and continues to get more than 2000 page views a day. So, I’m pleased that people are interested in this important issue and trying to learn about it. But I’ve also found a tremendous amount of confusion and misinformation in the past 5 months including people who doubt that this is a real issue, some who still haven’t heard about it, and people who mistakenly think it’s just grain-free diets or that it’s only related to taurine.

As a result of the continued confusion, some of my cardiologist colleagues and I wrote an article which was published in the latest issue of the *Journal of the American Veterinary Medical Association*. This article provides a summary of our current understanding of diet-associated dilated cardiomyopathy (DCM), how to recognize it, and a recommended protocol for veterinarians to follow when they see dogs with DCM.

To be sure this information reaches as wide an audience as possible and to clear up confusion, I thought I’d provide some updates to address the most common misconceptions I’m hearing:

1. *It's not just grain-free.* This does not appear to be just an issue with grain-free diets. I am

calling the suspected diets, “BEG” diets – boutique companies, exotic ingredients, or grain-free diets. The apparent link between BEG diets and DCM may be due to ingredients used to replace grains in grain-free diets, such as lentils or chickpeas, but also may be due to other common ingredients commonly found in BEG diets, such as exotic meats, vegetables, and fruits. In addition, not all pet food manufacturers have the same level of nutritional expertise and quality control, and this variability could introduce potential issues with some products.

2. *Most dogs being diagnosed with DCM do not have low taurine levels.* Some owners continue to feed a BEG diet but supplement taurine thinking that this will reduce their risk for heart disease. In our hospital, we currently measure taurine in all dogs with DCM, but more than 90% of our patients with DCM in which taurine has been measured have normal levels (and the majority are eating BEG diets). Yet some of these dogs with DCM and normal taurine levels improve when their diets are changed. This suggests that there’s something else playing a role in most cases – either a deficiency of a different nutrient or even a toxicity that may be associated with BEG diets. Giving taurine is unlikely to prevent DCM unless your dog has taurine deficiency. And given the lack of quality control for dietary supplements, you can introduce new risks to your dog if you give a supplement without evidence that she needs it.
3. *Raw diets and homemade diets are not safe alternatives.* Out of concern, some owners are switching from BEG diets to a raw or home-cooked diet. However, we have diagnosed DCM in dogs eating these diets too. And raw and home-cooked diets increase your dog’s risk for many other health problems. So, forego the raw or home-cooked diets and stick with a commercial pet food made by a well-established manufacturer that contains common ingredients, including grains. If your dog requires a home-prepared diet for a medical condition or you feel strongly about feeding one, I strongly recommend you consult with a Board-Certified Veterinary Nutritionist™ (acvn.org). However, because home-cooked diets are not tested for safety and nutritional adequacy like good quality commercial diets, deficiencies could still develop.

### **Current thoughts on DCM**

Currently, it appears that there may be three separate groups of dogs with DCM (although this may change as we learn more). I am listing them in the approximate frequency that we are currently seeing them in our hospital:

1. *Diet-associated DCM with normal taurine levels.* While this form of the disease was first identified in dogs of breeds not predisposed to DCM that are eating BEG diets, it appears to also occur in dogs of typical DCM breeds that are eating a BEG diet.
2. *Primary DCM in predisposed breeds that is unrelated to diet.* This is the traditional, genetically-related DCM in typical breeds, such as the Doberman Pinscher, Boxer, Irish Wolfhound, and Great Dane.

3. *Diet-associated DCM with taurine deficiency*: This is the least common form we are seeing in our hospital. This appears to happen both in breeds predisposed to DCM and breeds that are not predisposed to DCM.

## Common questions

We still have a great deal to learn about diet-associated DCM. However, I'm providing answers to some common questions I've been getting based on what is currently known:

1. *What's causing diet-associated DCM in dogs?* **For the vast majority of dogs, we do not yet know what is causing this disease.** There are definitely some dogs with DCM that have low taurine levels, many of which will improve with taurine supplementation and change of diet. For dogs that have normal taurine levels, however, other nutritional deficiencies may be present. Some nutritional deficiencies can affect the heart's normal function, so an insufficient amount of these nutrients (or reduced bioavailability) in the diet could cause heart disease. Diet-associated DCM could also be due to an ingredient in the food that is toxic to the heart. The FDA and many researchers are actively studying this issue so that it can be solved as quickly as possible.
2. *My dog was diagnosed with DCM. What should I do?* **Ask your veterinarian to measure taurine levels and give heart medications as directed by your veterinarian.** If your dog is eating a BEG diet or other unconventional diet (including vegetarian, vegan, or home-prepared diets), I recommend following the steps outlined in my previous post, including switching to a non-BEG diet. Three updates to my previous post are:
  - *Taurine supplements*: Consumer Lab is expected to release a report on independent quality control testing of taurine supplements in late 2018. Given the lack of quality control for dietary supplements (human and pet), having these results will be very useful to find good quality products for dogs that require taurine supplementation. Your veterinarian or veterinary cardiologist can help you determine an optimal dose for your dog.
  - *Other dogs in the household*: We are now recommending that other dogs in the household of dogs with DCM that are eating the same BEG diet be screened by their veterinarian since their hearts could also be affected (even if they are showing no symptoms).
  - *Outcome*: Not all dogs with DCM will improve and improvements in the echocardiogram, when they do occur, can take a long time (often more than 6 months).
3. *If my dog is eating a BEG diet but has no symptoms, should I test for DCM or switch to a different diet?* It's unlikely that most dogs eating a BEG diet will develop DCM. **However, given the fact that we don't yet understand why BEG diets are affecting some dogs and because DCM is a life-threatening disease, I recommend you reconsider your dog's diet until we know more.** Contrary to popular belief, there are no health benefits

of grain-free or exotic ingredient diets except in the rare case of food allergy. If your dog is a part of your family and you want to feed him the very best, be sure to base this important decision on more objective factors than marketing and the ingredient list (see our post).

Be sure to watch for early signs of heart disease – weakness, slowing down, less able to exercise, shortness of breath, coughing, or fainting. If you notice any of these, get your dog checked out by your veterinarian who will listen for a heart murmur or abnormal heart rhythm (although not all dogs with DCM have any changes that can be heard with a stethoscope). Your veterinarian (or a veterinary cardiologist) may do additional tests, such as x-rays, blood tests, electrocardiogram, and ultrasound of the heart (echocardiogram – the test of choice to diagnose DCM). Tell your veterinarian what you're feeding your dog. You can help your veterinarian by bringing a list of everything your dog eats to every appointment.

If your dog has no symptoms, additional testing is really up to you. Some owners have measured plasma and whole blood taurine levels or scheduled an echocardiogram to check their dog's heart size and function. However, given the cost of an echocardiogram, other owners have elected to have their veterinarian do a blood test called NT-proBNP, which goes up when the heart is enlarged. While a normal value doesn't guarantee your dog has no heart disease, a high level suggests your dog's heart should be evaluated further.

4. *Has diet-associated DCM been seen in cats?* The association between BEG diets and heart disease has only been reported in dogs so far. However, that doesn't mean cats are immune. If your cat is diagnosed with DCM and is eating a BEG, vegetarian, vegan, or home-prepared diet, I recommend following the same protocol as described for dogs with DCM.

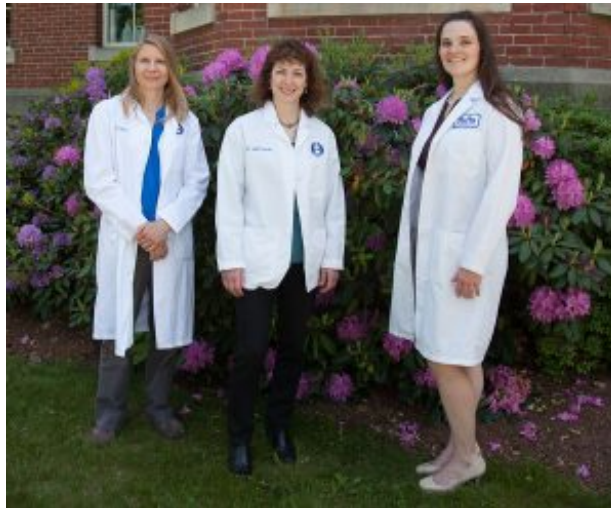
Lastly, if your dog has been eating a BEG diet and has been diagnosed with DCM, please don't feel guilty. I've talked to owners who feel terrible because they wanted to provide the finest care for their dog by feeding them the best diet possible. They often spent a lot of money buying an expensive boutique diet and now that same diet may be associated with their dog's heart disease. Trying to decide what is really the best food is confusing and difficult because of the many different products available, nutrition fads, and compelling marketing. My hope is that the one bright side of this serious situation is that it will shine a light on the complexities of making safe and nutritious pet food and the importance of nutritional expertise and quality control, rather than just what is new and trendy.



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