


AUGUST 2021



DIET RELATED DILATED CARDIOMYOPATHY (DCM)

Information from Tufts Cardiology and Nutrition Service

Dr. Lisa Freeman, DVM, Ph.D., DACVN

Edited by Dr. Katrina Cusack, MVB

EARLIER THIS YEAR, RUGER, A 5-YEAR-OLD FEMALE PITBULL WAS DIAGNOSED WITH A LIFE-THREATENING HEART DISEASE AT VREC NORWALK VETERINARY HOSPITAL. RUGER HAD BEEN LETHARGIC, NOT EATING WELL, AND OCCASIONALLY COUGHING. AFTER OBTAINING A FULL MEDICAL HISTORY, OUR CARDIOLOGY TEAM DISCOVERED THAT HER OWNER, IN A DESIRE TO DO THE BEST THING FOR HER, WAS FEEDING A BOUTIQUE, GRAIN-FREE DIET CONTAINING KANGAROO AND CHICKPEAS. RUGER REQUIRED SEVERAL MEDICATIONS TO TREAT HER HEART FAILURE, BUT HER OWNER ALSO CHANGED HER DIET. SHE HAS BEEN DOING WONDERFULLY AT HOME, AND WE ARE ALL HOPEFUL HER HEART WILL BEGIN TO REMODEL ON A TRADITIONAL DIET.

Heart disease is common in our companion animals, affecting 10-15% of all dogs and cats, with even higher rates in Cavalier King Charles Spaniels, Doberman Pinschers, and Boxer dogs. Most nutritional recommendations focus on treating dogs and cats with heart disease and there is much less information on the role of diet in causing heart disease. However, a recent increase in heart disease in dogs eating certain types of diets may shed light on the role of diet in causing heart disease. It appears that diet may be increasing dogs' risk for heart disease because owners have fallen victim to the many myths and misperceptions about pet food. If diet proves to be the cause, this truly is heart-breaking to me.

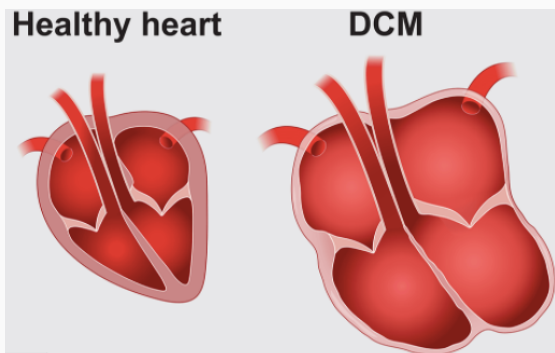
There have been vast improvements in our knowledge about pet nutrition, in the quality of commercial pet foods, and in our pets' nutritional health (other than the unfortunate rise in obesity). *However, in the last few years, there have been more cases of nutritional deficiencies due to people feeding unconventional diets, such as unbalanced home-prepared diets, raw diets, vegetarian diets, and boutique commercial pet foods.* The pet food industry is a competitive one, with more and more companies joining the market every year. Marketing is a powerful tool for selling pet foods and has initiated and expanded fads, that are unsupported by nutritional science, including grain-free and exotic ingredient diets. All this makes it difficult for pet owners to know what is truly the best food for their pet (as opposed to the one with the loudest or most attractive marketing). Because of the thousands of diet choices, the creative and persuasive advertising, and the vocal opinions on the internet, pet owners aren't able to know if the diets they're feeding have nutritional deficiencies or toxicities – or could potentially even cause heart disease.



Ruger

Dilated cardiomyopathy (DCM)

DCM is a serious disease of the heart muscle which causes the heart to beat more weakly and to enlarge. DCM can result in abnormal heart rhythms, congestive heart failure (a build-up of fluid in the lungs or abdomen), or sudden death. In dogs, it typically occurs in large and giant breeds, such as Doberman pinschers, Boxers, Irish Wolfhounds, and Great Danes, where it is thought to have a genetic component. Recently, veterinary cardiologists have been reporting increased rates of DCM in dogs – in both the typical breeds and in breeds not usually associated with DCM, such as Miniature Schnauzers or French Bulldogs. There is suspicion that the disease is associated with eating boutique or grain-free diets, with some of the dogs improving when their diets are changed. The US Food and Drug Administration (FDA) Center for Veterinary Medicine and veterinary cardiologists are currently investigating this issue.



Is diet the cause?

It's not yet clear if diet is causing this issue. The first thought was a deficiency of an amino acid called taurine. We still occasionally see taurine deficiency-induced DCM in cats but it is usually when owners are feeding a vegetarian or home-prepared diet, supplemental diets, or a diet made by a manufacturer with inadequate nutritional expertise or quality control.

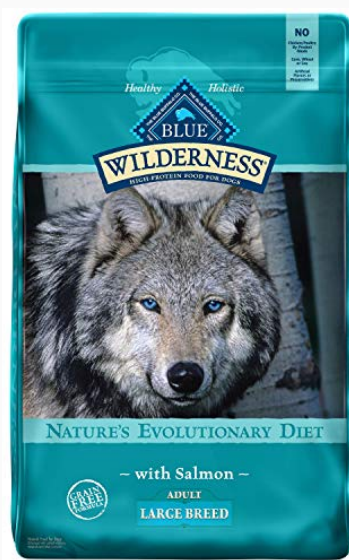
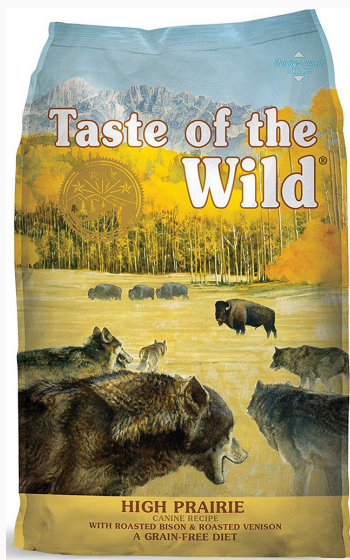
The reasons for taurine deficiency in dogs are not completely understood but could be reduced production of taurine due to dietary deficiency or reduced bioavailability of taurine or its building blocks, increased losses of taurine in the feces, or altered metabolism of taurine in the body.

No matter what the reason, the number of dogs with taurine deficiency and DCM subjectively appeared to decrease since the early 2000s. However, recently our cardiology community has noticed an uptick in cases of DCM in typical and atypical breeds. They also noticed that both the typical and atypical breeds were more likely to be eating boutique or grain-free diets, and diets with exotic ingredients – kangaroo, lentils, duck, pea, fava bean, buffalo, tapioca, salmon, lamb, barley, bison, venison, and chickpeas. Even some vegan diets have been associated. It has even been seen in dogs eating raw or home-prepared diets.

So, is this latest rash of DCM caused by taurine deficiency? Most of these affected dogs were eating boutique, grain-free, or exotic ingredient diets. Some of the dogs had low taurine levels and improved with taurine supplementation. *But even some of those dogs that were not taurine deficient improved with taurine supplementation and diet change.* Fortunately, cardiologists reported the issue to the FDA which is currently investigating this issue.

DOG BREEDS PREVIOUSLY REPORTED AT RISK OF TAURINE DEFICIENCY AND DCM:

- Golden Retrievers
- Cocker Spaniels
- Newfoundlands
- St. Bernards
- English Setters
- Irish Wolfhounds
- Portuguese Water Dogs



It's not so simple

Currently, it seems that there may be two separate problems occurring – one related to taurine deficiency and a separate and yet unknown problem (with a third group of dogs likely having DCM completely unrelated to diet). Identifying the potential dietary factors contributing to DCM in the non-aurine deficient dogs is more difficult, but the FDA and cardiologists are hard at work trying to solve it. What seems to be consistent is that it does appear to be more likely to occur in dogs eating boutique, grain-free, or exotic ingredient diets.

Exotic ingredients are on the rise

Why are pet owners feeding these exotic ingredients? It is likely primarily because pet owners are falling victim to marketing that portrays exotic ingredients as more natural or healthier than typical ingredients. There is no truth to this marketing – and there is no evidence that these ingredients are any more natural or healthier than more typical ingredients. This is just good marketing that preys on our desire to do the best for our pets. ***There is no proof that grain-free is better!***

Many pet owners have, unfortunately, also bought into the grain-free myth. The fact is that food allergies are very uncommon, so there's no benefit of feeding pet foods containing exotic ingredients. And while grains have been accused on the internet of causing nearly every disease known to dogs, grains do not contribute to any health problems and are used in pet food as a nutritious source of protein, vitamins, and minerals.



Exotic ingredients are more difficult to use

Not only are the more exotic ingredients unnecessary, they also require the manufacturer to have much more nutritional expertise to be nutritious and healthy. Exotic ingredients have different nutritional profiles and different digestibility than typical ingredients, and also have the potential to affect the metabolism of other nutrients. For example, the bioavailability and metabolism of taurine is different in a lamb-based diet compared to a chicken-based diet or can be affected by the amount and types of fiber in the diet. Small pet food manufacturers might be better at marketing than at nutrition and quality control

Making high-quality, nutritious pet food is not easy! It's more than using a bunch of tasty-sounding ingredients. The right nutrients in the right proportions have to be in the diet, the effects of processing (or not processing) the food need to be considered, and the effects of all the other ingredients in the food need to be addressed, in addition to ensuring rigorous quality control and extensive testing. Not every manufacturer can do this.

So, what do we feed our dogs?

TOP 5 DOG FOOD COMPANIES:

- Hill's
- Science Diet
- Royal Canin
- Eukanuba
- Iams
- Purina One

When looking for high-quality dog food, more expensive doesn't always mean better! When looking at various diets at the pet stores or online, read the label to ensure that they meet WSAVA (World Small Animal Veterinary Association) guidelines. The diets to the right have veterinary nutritionists on staff, and go through rigorous diet trials as well.



Common Myths and Misconceptions

1) It's not just grain-free.

This does not appear to be just an issue with grain-free diets. The suspected diets are being called, "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. This may be the case for some dogs, however some dogs with structural heart disease being fed a BEG diet have normal taurine levels. 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, DCM has been diagnosed 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 homecooked 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, consultation with a Board-Certified Veterinary Nutritionist is strongly recommended (acvn.org). However, because home-cooked diets are not tested for safety and nutritional adequacy like good quality commercial diets, deficiencies could still develop.

