**Blog Post 149 FDA DCM Updates 20190219**

Title: FDA Updates on Heart Disease in Dogs

The Food and Drug Administration (FDA) issued an updated announcement on February 19, 2019 about the possible link between certain diets and dilated cardiomyopathy (DCM; a form of heart disease) in dogs.

DCM can be associated with a deficiency of the amino acid, taurine. At this time, it is believed that dogs do not need to be given additional taurine, beyond what is provided in a balanced meat-based diet, because dogs synthesize two other amino acids, cystine and methionine, which are precursors of taurine. Certain dog breeds are predisposed to DCM, and if the condition progresses, it could result in congestive heart failure.

Hemopet reviews those findings here in comparison to what was initially hypothesized, provides insights into the causes of the initial uproar, and offers suggestions.

# FDA Announcement on July 12, 2018

“The U.S. Food and Drug Administration is alerting pet owners and veterinary professionals about reports of canine dilated cardiomyopathy (DCM) in dogs eating certain pet foods containing peas, lentils, other legume seeds, or potatoes as main ingredients. These reports are unusual because DCM is occurring in breeds not typically genetically prone to the disease.

The underlying cause of DCM is not truly known, but is thought to have a genetic component. Breeds that are typically more frequently affected by DCM include large and giant breed dogs, such as Great Danes, Boxers, Newfoundlands, Irish Wolfhounds, Saint Bernards and Doberman Pinschers. It is less common in small and medium breed dogs, except American and English Cocker Spaniels. However, the cases that have been reported to the FDA have included Golden and Labrador Retrievers, Whippets, a Shih Tzu, a Bulldog and Miniature Schnauzers, as well as mixed breeds.”

# FDA Updates on February 19, 2019

We summarized the statements below taken straight from the FDA’s latest announcement and have added a few notations.

* Based on the data collected and analyzed thus far, the agency believes that the potential association between diet and DCM in dogs is a **complex scientific issue that may involve multiple factors.  
    
  *Author’s Note:*** The FDA does not know the cause of DCM in dogs after collecting evidence, and admits more is going on than meets the eye.
* Between January 1, 2014 and November 30, 2018, the FDA received 300 reports of DCM (294 canine reports, 6 feline reports). Approximately 276 of these were reported after the July public notification about FDA’s investigation.   
    
  ***Author’s Note:***Only 24 cases were reported during four and one-half years, or 54 months, compared to 276 cases reported during the last six months.
* Past publications and research suggest that Golden Retrievers may be genetically predisposed to taurine deficiency, which is well-documented as potentially leading to DCM.   
    
  ***Author’s Note:*** In the FDA report, Golden Retrievers were disproportionately represented: 61 Golden Retrievers out of the approximately 294 dogs with breeds identified.
* Based on analysis of the 196 DCM reports sent to FDA in which dogs were fed only a single, primary diet (i.e., didn’t eat multiple food products, excluding treats), approximately 90 percent of the foods were reported to be labeled “grain-free” (or labeled as zero-grain) and approximately 10 percent ate diets containing grains, some of which were vegan or vegetarian. A large proportion of the reported diets in DCM cases contained peas and/or lentils.

***Author’s Note:*** 269 out of the 294 foods were dry (kibble) diets.

* Animal protein sources in the reported diets varied widely. Of the 191 reports with a single primary diet that contained animal protein (rather than being vegan/vegetarian), 31 percent contained more than one animal protein source**. The majority of diets containing animal protein included fish, eggs, lamb or chicken.** No one animal protein source was predominant.
* The average percent protein and fat, as well as total taurine, cystine, methionine, and methionine-cystine, and the resistant starch content on a dry matter basis (in other words, after removing all moisture content), were **similar for both grain-free labeled and grain-containing products.**
* Nearly all of the grain-free products had methionine-cystine values above the minimum nutritional requirement of 0.65 percent for adult maintenance dog foods published in the Association of American Feed Control Officers (AAFCO) Official Publication.
* Past publications and research suggested that Golden Retrievers may be genetically predisposed to taurine deficiency, which is well-documented as potentially leading to DCM.   
    
  ***Author’s Note:*** DCM in Golden Retrievers has been studied since 1995. Please note that the initial FDA announcement intimated that cases of DCM in Golden Retrievers were novel.
* Veterinary cardiologist Dr. Joshua Stern from the University of California at Davis and his colleagues have been studying the rise in cases of DCM in Golden Retrievers, including a potential dietary link. Many cases of DCM occur in Golden Retrievers that are taurine-deficient. Pet owners who suspect their Golden Retrievers may be affected may wish to consult their veterinarian to discuss checking taurine levels or conducting an echocardiogram.

# Hemopet’s Views

Dr. Dodds and Hemopet have always urged caution about jumping to conclusions, when preliminary information is released and then spreads over social and other media to create a frenzy of misleading assumptions. We referenced previous studies that demonstrated lower taurine concentrations in the blood from dogs eating formulations that contained combinations of grains and proteins such as barley and turkey or lamb and rice, and one that showed beet pulp as a possible contributor by binding taurine.

One reason in particular is the presence of food sensitivities or intolerances to specific grains. According to the FDA DCM report, “Approximately 42% (n=45) of dogs with DCM had a history of allergies or sensitivities to an environmental allergen and/or food that was manifested as dermatitis, otitis, or gastrointestinal disease.”

# Commentary

The framing of a *possible* connection between grain-free diets and DCM in dogs was premature and set off alarm bells across the veterinary and dog world communities.

The veterinary group mentioned above have now veered away from their initial opinions to speculating that the animal protein source is to blame. Specifically, they point to “exotic” animal protein sources such as kangaroo, duck, buffalo, salmon, rabbit, venison, lamb and bison.

Even though this group of researchers acknowledges prior research, lack of knowledge, the complexity of food interaction, that processing and heat can affect amino acids, that bioavailability varies between animal muscle proteins, that taurine deficiency may be related to cardiotoxic ingredients in the diet, and a host of other potential causes, they remain focused on what they have coined as boutique-exotic-grain-free ( aka “BEG”) diets.

The FDA’s reports are not in line with this hypothesis as 31 percent contained more than one animal protein source**. The majority of diets containing animal protein included fish, eggs, lamb or chicken.** No one animal protein source was predominant.

# Hypotheses About the Cause of DCM in Dogs

At this point in time, we have ideas about the causes of and contributors to DCM in dogs, and you likely do too. However, speculation on such a serious disease may cause radical shifts in feeding practices that are not based on scientific evidence and may do more harm than good. As the FDA said, “DCM in dogs is a complex scientific issue that may involve multiple factors.”

**References**

<https://www.hemopet.org/fda-dog-heart-disease/>

<https://www.hemopet.org/dcm-heart-disease-dogs-exotic-ingredients/>

<https://avmajournals.avma.org/doi/full/10.2460/javma.253.11.1390>

<https://www.fda.gov/AnimalVeterinary/ScienceResearch/ucm630738.htm>

<https://www.fda.gov/AnimalVeterinary/NewsEvents/ucm630993.htm>

Kramer GA, Kittleson MD, Fox PR, et al. Plasma taurine concentrations in normal dogs and in dogs with heart disease. *J Vet Intern Med* 1995 ;9 :253–258.