

## **WHAT EVERYONE SHOULD KNOW ABOUT GRAIN FREE DIETS**

### ***WARNING: Feeding Grain Free Diets to Your Dog Might Cause Heart Disease***

During the last 5 years veterinarians have seen an alarming increase in a potentially fatal heart disease in dogs eating grain free diets

#### **Why are people feeding Grain Free Diets to their dogs?**

Many smaller boutique dog food companies have been promoting grain free diets claiming that they are more natural or that they promote healthier skin, coat and digestion. These claims are not supported by scientific research, and it turns out that feeding some of these grain free diets can actually be dangerous to your dog.

#### **What is the problem with feeding Grain Free Diets?**

While some dogs can be fed grain free diets without damaging their heart, there have now been many documented cases of grain free diets causing dilated cardiomyopathy, heart failure and death in dogs.

#### **What is Dilated Cardiomyopathy?**

Dilated cardiomyopathy (DCM) is a serious disease of the heart muscle that causes the heart to beat more weakly and to dilate (enlarge) and become thinner than normal. Over time DCM results in heart failure with reduced blood flow to tissues and fluid buildup in the lungs.

DCM occurs as an inherited problem in some large and giant breeds of dogs such as Doberman pinschers, Irish Wolfhounds and Great Danes, regardless of what diet they are eating. DCM in these dogs is a progressive, ultimately fatal condition, with average survival after diagnosis 3 to 6 months.

#### **What is Diet-Associated DCM?**

In 2018 veterinary cardiologists recognized that there was a dramatic increase in dogs being referred for DCM that were not from the typical breeds that get inherited DCM. These dogs were a variety of breeds and a wide range of ages. Investigation revealed that all of the affected dogs were being fed grain free diets. Most mildly and moderately affected dogs had a positive response when their diet was changed to a more traditional diet.

***In July 2018, the US Food and Drug Administration (FDA) issued a warning about diet-associated DCM in dogs being fed grain free diets.***

## **What diets are implicated?**

Multiple grain free diets made by smaller “boutique” dog food manufacturers have been implicated and affected pets have typically been eating them for several months or years before developing heart disease.

The diets don't usually contain grains but do contain a large amount of peas, lentils, and/or potatoes. Most of the implicated diets are dry kibble style food, although a few are wet, semi-moist or raw foods.

In June 2019 the Food and Drug Administration (FDA) provided a list of the pet food brands most commonly implicated in approximately 500 documented cases of diet associated DCM.

Almost 50% of the cases were being fed Acana, Zignature or Taste-of-the-Wild diets. Thirteen other companies had diets with multiple cases including: 4Health, Earthborn Holistic, Blue Buffalo, Nature's Domain, Fromm, Merrick, California Natural, Natural Balance, Orijen, Nature's Variety, NutriSource, Nutro, Rachael Ray Nutrish.

Brands like Acana, Zignature, From, and Orijen each encompass less than 0.1% of the dog food market yet their grain free diets have a very high DCM case correlation.

This list was generated almost 3 years ago and some of these companies may have addressed the issue with their diet. It is clear, however, that many owners continue to feed grain free diets and dogs continue to get diet associated DCM. At this point any diet that is grain free and legume based should be considered a suspect diet.

More traditional pet food manufacturers like Purina, Royal Canin, Eukanuba and Iams have had NO nutritional diet-associated DCM cases identified.

An interesting observation : Even though Canada does not have widespread availability of veterinary cardiologists or advanced cardiac testing we are very over-represented compared to the US in terms of percentage of the dog population affected by diet associated DCM. This could be because the pulse crop industry is strong in Canada or because Canadians are more motivated to feed their dogs “natural” diets.

## **Mechanism of Heart Injury**

The exact mechanism through which grain free diets cause heart damage or dysfunction is not entirely clear. In a few susceptible dog breeds grain free diets cause a deficiency of taurine, an important amino acid for heart health. Most notably this is the case in Golden retrievers and American Cocker Spaniels.

Most dogs with diet associated DCM are not taurine deficient. Grain free diets have high concentration of peas, lentils or potatoes and these components may have a direct toxic effect on the heart.

## **What are the signs of Diet Associated DCM?**

Diet Associated DCM is identical to inherited DCM except that different breeds and ages of dogs are affected and the heart damage is largely reversible when affected dogs are changed to a traditional diet.

There will be no signs of DCM until there is fairly severe damage to the heart. Affected dogs become exercise intolerant and may then exhibit weakness, loss of appetite, coughing and difficulty breathing due to fluid buildup in the lungs. Some dogs die suddenly due to a cardiac arrhythmia.

Veterinary evaluation in a dog with severe DCM may reveal a mild heart murmur, rapid weak pulses, an abnormal heart rhythm, or possibly fluid in the lungs or in the chest and abdomen.

Tests that may be performed by your veterinarian include:

Basic lab work including CBC and chemistry

Thoracic radiographs to look for heart enlargement and lung congestion

ECG to examine the heart rhythm

Cardiac echocardiogram (ultrasound) – this is the best test to diagnose DCM and assess the severity of heart damage

Measure taurine in blood and plasma

## ***Management of Diet Associated DCM***

If dog is being fed a grain free diet but has no symptoms or physical exam concerns, most veterinarians recommend changing the diet to a diet with more typical made by a company with a long track record of producing good quality diets, even realizing that most dogs on the grain free diets do not develop DCM.

If there are historical symptoms or physical examination findings suggesting DCM, an echocardiogram is recommended to determine the severity of the heart damage. The diet should be changed immediately to a traditional diet and taurine may be supplemented. Treatment with cardiac drugs like pimobendan and diuretics may be required in severely affected dogs.

## **Prognosis**

Dogs with diet-associated DCM have a much better prognosis than dogs with inherited DCM as long as they are switched to a diet with more typical ingredients.

Improvement can take 3-6 months and requires frequent monitoring. Severely affected dogs may require heart medications until improvement occurs. The longer a grain free diet is fed the more likely it is that heart damage will be severe. The sooner the issue is recognized and corrected the better the prognosis. The heart disease may not be completely reversible in all dogs.

*Prepared by Sue Taylor, DVM, DACVIM, Small Animal Internal Medicine specialist*