

Vitamin D Toxicity in Dogs

by Dr. Karen Shaw Becker

A few months ago I wrote about a handful of dry dog foods that were recalled for excessive levels of vitamin D. I obviously don't write about every processed pet food recall, but that was one I considered critical, since vitamin D toxicity in pets can be a life-threatening emergency.

Since that article, as I'm sure many of you are aware, the problem has exploded with the Hill's Pet Nutrition recall of many varieties of their Prescription and Science diets. You can find a list (as of March 20, 2019) at FDA.gov. You can also find a presumably complete list of earlier recalls for the same problem by other pet food brands [here](#).

Thus far, seven class action lawsuits have been brought against Hill's by pet parents whose dogs died as the result of vitamin D toxicity after eating a Hill's product. You can find links to the filings at TruthAboutPetFood.com According to a February article in veterinary journal *dvm360*:

"It's unclear how many dogs have died as a result of eating the recalled Hill's products, but a quick glance through social media indicates that hundreds of owners believe their pets have been affected. To say that affected owners are devastated and angry is an understatement. *dvm360* spoke with several grief-stricken owners who believe their dogs have died as a result of eating the recalled foods."

How Can a Vitamin D 'Formulation Error' Affect Multiple Batches of Canned and Dry Dog Food Manufactured at Separate Facilities by Different Companies?

Both the FDA and the named pet food companies (Hill's and those whose recalls preceded Hill's) attribute the toxic levels of vitamin D to a "formulation error" without further explanation. So, the most obvious question becomes, how is it that over a dozen pet food brands simultaneously produced dog food with excessively high levels of vitamin D? As Susan Thixton at TruthAboutPetFood.com observes in a recent post:

"The FDA has not provided pet owners with an explanation about the 'formulation error' — specifically who's error was it? We are left to speculate if the ongoing problem was a formulation error at the pet food manufacturing facility or if it was a formulation error by the supplier of the Vitamin D supplement.

After the first two initial dog food recalls, seven more dry dog food recalls occurred up to December 5, 2018. For [eight] weeks we saw no new excess Vitamin D recalls, and then on January 31, 2019 we learned of a Hill's Pet Nutrition recall for 25 different varieties of canned dog foods.

So ... after the Hill's recall — we know that at least two separate manufacturing facilities [one attached to the first rash of recalls of a variety of dog foods; the other involving Hill's] are experiencing a 'formulation error' with Vitamin D — at least one kibble manufacturing facility and at least one canned pet food manufacturing facility.”²

As Susan correctly assesses, the formulation error about which neither the FDA nor the pet food industry wishes to elaborate, either occurred:

- Through human error at the manufacturing facilities where the dog foods were produced, or
- In the production of the vitamin/mineral premixes that were sold to the pet food manufacturers

A Closer Look at Vitamin/Mineral Premixes

The extreme conditions under which most canned and especially dry pet foods are produced kills a significant amount of their nutritional value. So, to meet **AAFCO** standards for “complete and balanced” pet foods, manufacturers purchase vitamin and mineral premixes that are sprayed on the batches of food at some point during production.

These premixes are presumably blends of the correct amounts of all the vitamins or minerals required to ensure the pet foods meet AAFCO standards. They come packaged in large bags similar in size to the biggest bags of dry dog food you can buy at Costco or Petco. Most of the vitamins and minerals in these premixes are synthetic and imported from China or India.

Since the toxic levels of vitamin D were found in dog food produced in at least two unrelated manufacturing facilities at about the same time, it seems unlikely that precisely the same human errors occurred in adding the premixes to the formulas. (Unlikely, but of course not impossible.)

I obviously don't know for sure, but I think it's more likely the excessive levels of vitamin D were in the premix products shipped to the facilities. In either case, it seems clear the manufacturers did not adequately test their products prior to packaging and shipping.

“If it is the premix,” Susan Thixton writes, “the concern is how many other pet food manufacturers received that same ‘formulation error’ premix? Are pet owners — right now — unknowingly giving their pet a toxic dose of vitamin D?”

In October 2017, I wrote about a lawsuit filed against Blue Buffalo for **excessive levels of lead** in some of their products. In February of this year, a lawsuit was filed against Taste of the Wild (manufactured by Diamond Pet Foods) for among other things, shockingly high levels of lead in one of their kibble formulas.

I think there's a good chance premixes are also the culprits in the case of excessive lead and other heavy metals in pet food. Synthetic minerals are often made from industrial byproducts, which means they can contain heavy metal contaminants such as arsenic, cadmium, lead, mercury and nickel.

Additional Thoughts on Premixes from Expert Pet Food Formulator Steve Brown

My friends, veterinarian Dr. Jean Dodds and pet food formulator Steve Brown, discussed the vitamin D toxicity issue recently at Dr. Dodds' **Hemopet** site. Like me and countless others, neither of these experts has the answer as to exactly what went wrong, but Steve offers some thoughts:

- Per AAFCO, on a dry matter basis, the minimums and maximums for vitamin D aren't that far apart, at least when compared to other nutrients with known maximums. The minimum is 500 IU/kg and the maximum is 3,000 IU/kg. The maximum is only six times the minimum, which doesn't leave much room for error.
- The intensity of vitamin D in pet feed vitamin premixes is much more nutrient-dense than in the supplements we buy at the store, for reasons of palatability. Example: 1 gram (capsule) of most retail vitamin D supplements is from 500 to 5,000 IU, whereas 1 gram of a commercial vitamin D supplement for use in a premix can contain 500,000 IU.

Toxic levels of vitamin D can occur if the premix is not blended well, the pet food manufacturer doesn't blend it evenly, or adds too much, or makes some other mistake. When this occurs, chances are there may be other nutrient excesses, deficiencies or imbalances elsewhere in the batch. We just may not be aware of them.

- The premix may have become settled and separated due to uneven mixing or mishandling. When this occurs, the minerals are much denser and fall to the bottom of the vat. The vitamins, on the other hand, end up at the top. So, a dog that eats a meal with a premix from the top of the vat may ingest an excess of vitamin D and other vitamins.

My Advice for Concerned Pet Parents

There are countless potentially disastrous issues with processed pet food (feed), many of which I discuss regularly here at Mercola Healthy Pets and during lectures, training seminars and other appearances I make across the U.S. and outside the country as well. Unfortunately, little has changed in the U.S. pet food industry despite the recalls, lawsuits, other forms of pressure to do better and the ever-growing number of beloved animal companions who've become sick or died after being fed contaminated pet food.

Those of us who advocate for improvement in the sourcing, processing and regulation of pet food will continue the fight, but in the meantime, I strongly encourage you to consider preparing your pet's meals in your own kitchen using ingredients you choose yourself, and following nutritionally balanced recipes like those provided by my Recipe Creator for adult dogs, or those created through Animal Diet Formulator.

Fresh, raw food is unadulterated and contains all the enzymes and nutrients that are typically destroyed during cooking or other types of processing. Making homemade food allows you to take complete control of the source and quality of the ingredients in your furry family member's diet. It also allows you to take advantage of buying fresh, seasonal vegetables on sale and offers the option to rotate your use of species-appropriate fresh meats and poultry.

Pets should receive most of the vitamins and minerals they require from whole, fresh, species-appropriate food. To ensure nutritional balance, choose a vitamin and mineral supplement made in the U.S. that contains all human-grade ingredients. Another but pricier option is to select a small fresh pet food company you've researched thoroughly, and feel you can trust and transition your precious four-legged family member to a safe and optimally healthy fresh food diet.