

Nutrigenomics and the Pet Food Revolution

See what Dr. Michael W. Fox has to say about processed pet food, diseases in dogs and cats related to eating habits, and a book he recommends for everyone out there who cares about dogs.

Analysis by [Dr. Karen Shaw Becker](#)

STORY AT-A-GLANCE

- Most dogs and cats eat processed pet diets containing byproducts and ingredients deemed unfit for human consumption
- Diet-related diseases in dogs and cats are attributable to heat-processed, nutrient-deficient, and in some cases, contaminated commercial pet foods. Some of these diet-related diseases are also seen in humans
- Whole, minimally processed human food-grade quality ingredients should be fed, in biologically appropriate proportions, to cats and dogs
- Genetics influence the way in which certain dietary ingredients are associated with disease. This field of scientific investigation and clinical application is called nutrigenomics
- Everyone who lives with, works with and cares for dogs should read *Canine Nutrigenomics: The New Science of Feeding Your Dog for Optimum Health*, co-authored by Dr. Jean Dodds

Editor's Note: This article is a reprint. It was originally published July 13, 2015.

Today I'm featuring a fascinating article Dr. Michael W. Fox has written for readers here at Mercola Healthy Pets. It's titled "Nutrigenomics and the Pet Food Revolution."

Some of you may remember my 2012 three-part interview with Dr. Fox, an internationally recognized veterinarian and former vice-president of both the Humane Society of the United States and Humane Society International. Dr. Fox is also a prolific author of many wonderful books about pet health, diets for pets, and a variety of other topics. A list of his books can be found [here](#).

The Role of Nutrigenomics in the Pet Food Revolution

By Dr. Michael W. Fox, BVetMed, PhD, DSc, MRCVS Veterinarian, bioethicist, syndicated columnist (Animal Doctor with Universal-UClick)

Manufactured pet foods are profitably derived from the human food and beverage industries that continue to rely on the use of increasingly contaminated, hazardous and depleted terrestrial and aquatic ecosystems.

Most dogs and cats consume these foods, which contain byproducts and materials rejected and condemned as unfit for human consumption, including the infamous “4-D” meat from animals that are dead, dying, debilitated, or diseased.

Billions of dollars have been made by the pet food industry, which forms a lucrative subsidiary of industrial agriculture/“agribusiness.” Despite the efficiency and cost-savings of this highly profitable practice for companion and farmed animal (including fish) feed industries, safety and nutritional quality concerns continue to be issues that regulatory agencies (the FDA and USDA) are hard-pressed to monitor and rectify.

This is mainly because the extremely complex international industrial food system has internal problems such as nutrient-deficient soils and crops, along with agrichemical and animal drug residues that call for entirely different, ecologically sound, sustainable and humane farming practices.

Processed Pet Food and Diseases in Dogs and Cats

The main ingredients in most pet foods are scientifically analyzed for basic nutrient content and are then subjected, often for the second time, to heat processing that usually destroys many nutrients. Identified deficiencies are rectified with various synthetic additives, which are not without risk, along with various preservatives and additives to make the product more appealing to pet caregivers.

Several diet-related diseases, which I term “nutrogenic” diseases, as distinct from food-borne illnesses, have been documented in dogs and cats. These, along with the recognized limitations of costly special prescription diets formulated by the pet food industry – allegedly to correct various nutrogenic diseases -- have been documented in the book **Not Fit for a Dog: The Truth About Manufactured Cat and Dog Food**, which I co-authored with veterinarians Dr. Elizabeth Hodgkins and Dr. Marion E. Smart.

I addressed additional concerns about genetically engineered ingredients and veterinary involvement with the pet food industry in my more recent book **Healing Animals & the Vision of One Health: Earth Care and Human Care**.

Some Diet-Related Health Issues Shared by Pets and Humans

Since the publication of the book *Sugar Blues* by William Duffy in 1975, there has been rising consumer awareness over the healthfulness of sugars in the human diet. Much research has been conducted, and ever more sugar has been consumed worldwide as food manufacturers prefer to deny the risks.

It is surely not mere coincidence that a cluster of serious diet-related diseases in humans are also seen in cats and dogs. Nor is it coincidence that these diseases can be prevented and often reversed with sugar-free, biologically appropriate diets.

Many diseases that affect humans and other animals, both wild and tame, are anthropogenic (self-inflicted) through our collective misuse of chemicals, drugs, natural resources and ecosystems. Some of the causes of the “diseases of civilization” will not be rectified for generations, if ever. But others can be addressed, notably what we choose to eat and what we feed to our companion animals, beginning with the elimination of cereal-derived carbohydrates and sugars (also from sugar cane and genetically engineered beets).

Dogs are more carnivorous than omnivorous humans, while cats are absolute/"obligate" carnivores. Omnivores, carnivores, and cats in particular, are harmed by refined sugars and those derived from high glycemic index carbohydrates that the body converts into sugars, which then trigger insulin release and storage of the calories from sugars as fat.

Cereal glutes, phytases, GMOs, herbicide residues, and various chemical and pharmaceutical "obesogens" may be co-factors in diet-related health problems. In fact, these high glycemic foods promote a state of chronic inflammation, a main contributor to the obesity which plagues more than 50% of the dog and cat population of North America.

Our canine and feline companions are showing us that what we're eating and feeding to them is closely associated with the cascade of health issues we face today -- in part from biologically inappropriate diets high in sugars and starches. These health issues include:

- Dental problems
- Oral and intestinal dysbiosis, which is the disruption of health-promoting populations of bacteria that leads to a hyper-reactive immune system, triggering allergies and autoimmune diseases
- Fatty liver disease
- Obesity
- Metabolic syndrome and resulting inflammatory diseases such as arthritis, some cancers, heart disease, high blood pressure, eye disease, diabetes, pancreatitis, chronic pancreatic enzyme insufficiency, inflammatory bowel conditions, kidney disease, and urological problems (especially in cats)
- Various other endocrine, exocrine, hepatic, renal, pancreatic, cardiac, hematological, respiratory, neurologic, cognitive, developmental, behavioral, dermatological, and other inflammatory and degenerative diseases

Foods We Should Eat and Feed Our Pets for Good Health

Humans need less sugar, and some functional complex carbohydrates in our diets [cruciferous vegetables; fresh, whole fruits (but not **grapes**); gluten-free grains; green, leafy vegetables; and legumes rich in phytonutrients and prebiotics]. Most dogs also need some of these functional carbohydrates in their diets, whereas cats need only a minimal amount (approximately 5%).

Primary, whole, minimally processed human food-grade quality ingredients should be fed, in biologically appropriate proportions, to companion cats and dogs. Ideally, these wholesome foods should not include chemical preservatives. Fortunately, there are a growing number of additive and preservative-free frozen and freeze-dried pet foods now on the market, some organically certified and with no GMOs.

Fresh whole foods mean better health and I advocate, as an alternative to these freeze-dried and frozen cat and dog foods, that people make their own foods from basic ingredients from the same stores they go to for their own non-manufactured dietary staples.

It is no coincidence that millions of dogs and cats develop similar diseases to those seen in their human companions and the larger consumer populace. One main reason is because they partake of the same food chain.

Other Influences on Diet-Related Diseases in Pets

That some people and cats and dogs have more systemic health problems associated with food sensitivity/intolerance and allergy than others eating similar foods points to genetic, epigenetic, home environment and lifestyle differences.

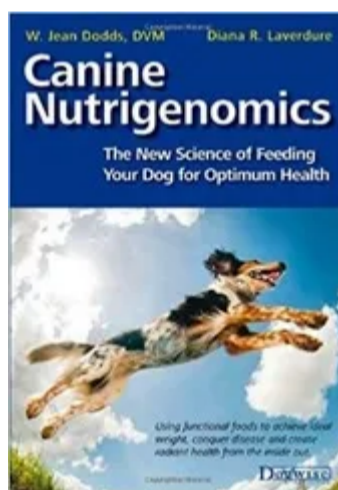
The role of genes in influencing how certain dietary ingredients are associated with disease is exemplified by the reactions of some dog breeds to wheat, copper, or zinc in their diets, and more generically in cats (who are obligate carnivores) to corn and soy products in theirs.

The relatively simplistic science of nutrition is advancing into the more integrated realm of holistic health and disease prevention where biologically and individually appropriate diets are the keystone for optimal health.

Diet-related nitrogenic diseases can be aggravated when various food ingredients alter the health-promoting population of bacteria in the digestive system, the "microbiome" or "garden of the guts," and when a particular breed or individual genome has gene-related processes and reactions to food ingredients that cause or aggravate illness. This field of scientific investigation and clinical application is termed nutrigenomics.

High Praise for 'Canine Nutrigenomics,' by Dr. Jean Dodds

The advent of the science of nutrigenomics is opening the door for an entirely new approach to human and animal nutrition and how food is produced and diets are formulated. For more information, I highly recommend a new book by W. Jean Dodds, DVM and Diana R. Laverdure, **Canine Nutrigenomics: The New Science of Feeding Your Dog for Optimum Health**, Wenatchee, Washington, Dogwise Publishing 2015.



This book should be mandatory reading for all veterinary students, as it is opening new vistas in nutritional science. It should also be essential reading for people who live, work with, and care for dogs, because it takes us to the next level of critical and analytical consideration of companion animal nutrition.

In explaining the interplay between genes, nutrients and intestinal bacteria (the "microbiome"), this book reaches a new level of understanding of some of the dynamics of disease hitherto unrecognized and unaddressed by human and animal doctors.

But we now have, with this book and the emerging science of nutrigenomics, a more integrated and holistic perspective. Chapter-highlighting summaries and practical instruction give this book a tutorial quality that enhances the learning experience. Its inclusion of herbal and other nutraceutical supplements will affirm and inspire advocates of those products.

Canine Nutrigenomics should make every reader consider what they are eating and feeding to their families (including pets). It also makes readers face the cruel realities of livestock and poultry factory farms and the misuse of antibiotics, hormones, and other drugs, as well as our polluted and over-fished oceans, nutrient depleted soils and pesticide-contaminated, genetically engineered crops.

More Healthful Foods Is a Distant, But Attainable Goal

Companion animals and their diet-related diseases are the proverbial canaries in the coalmine and guinea pigs in market-testing laboratories. That they get better and have healthier offspring when fed biologically appropriate whole foods, with some essential trace minerals and other nutrient-balancing additives with nothing more other than **probiotics** and prebiotics, is an indicator of how farming practices and the agribusiness food industry, as well as our own consumer habits, must change.

I have a degree of respect for the pet food industry for its contributions to the science of animal nutrition and related animal health. I have an even greater degree of sympathy for the challenges pet food manufacturers face in securing affordable, healthful and safe ingredients from multiple sources from around the world, while at the same time avoiding costly recalls and class action lawsuits when dogs and cats are sickened and even die from consuming their “Scientifically Formulated” and often “Veterinarian Approved” products.

More healthful foods for all is a distant, attainable ideal, but not yet a reality. However, choosing less un-healthful foods for our animal companions and ourselves is an immediate, achievable goal.

Canine Nutrigenomics provides an excellent directory to the marketplace of this evolution in human consumer habits, and scientific validation of the Hippocratic injunction to let our food be our medicine and our medicine our food.

This book is part of the nascent transformation of agriculture and the “One Health” revolution connecting public health and disease prevention with optimal nutrition that we must all join and support in the marketplace with our dollars and good sense.

The ability of consumers to make informed decisions in the marketplace for themselves and their companion animals is a right in any democratic society. It is a right that enlightened human and subsidiary pet food industries should respect, because more and more consumers are informed and they will ultimately vote with their dollars in the marketplace.
