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Cat Tips

The Diet Switch That Could Transform Your Cat's Health

A groundbreaking study highlights significant changes in the gut microbiomes of cats fed with whole mice compared to a kibble diet. Learn about the surprising findings and how they challenge current pet-feeding practices.

Analysis by Dr. Karen Shaw Becker

STORY AT-A-GLANCE

- A study was conducted recently at the University of Ghent in Belgium, to measure whether whole mice or minced mice have a more positive effect on the microbiome of domestic cats
- The researchers concluded there was no significant difference between the whole and ground mice in terms of the cats' health; however, they learned (perhaps unintentionally) that the difference was significant when comparing the effects of an extruded diet (kibble) to either of the mouse diets
- It should come as no surprise that cats, as strict carnivores, are healthier overall eating biologically appropriate food (i.e., a meat-based diet) than carb-stuffed food like kibble
- Cats' bodies aren't designed to digest carbohydrates efficiently, and most carbs in a cat's diet convert to sugar and fat — leading to obesity and related diseases, as well as an unbalanced microbiome
- Unprocessed animal tissue is an essential and species-perfect source of protein, vitamins, and moisture for cats; no adequate substitute exists

I recently ran across a study that suggests cats who eat whole mice enjoy potential gastrointestinal (GI) health benefits. The study was led by researchers in the Department of Veterinary and Biosciences, Faculty of Veterinary Medicine, at Ghent University in Belgium and was published in the British Journal of Nutrition.[1]

> *"Whether this [positive GI] effect is caused by the chemical or physical nature of whole prey is unknown," wrote the study co-authors.*[2]

The researchers set out to investigate whether the GI health benefit derived from the ingestion of whole mice would also occur with a diet of ground (minced) mice. As you'll see from the study results summarized below, the cats' enriched microbiomes weren't so much about whole vs. minced mice, but about what they were eating before the mice.

Biologically Appropriate Food vs. Kibble

For the study, the research team fed 15 domestic cats an extruded diet (**kibble**) for 10 days, then either minced mice or whole mice for 19 days. The frozen mice were thawed for 30 minutes in a plastic bag in boiled water, then either minced in a blender or left whole after a midline incision.

The researchers analyzed the cats' urine and feces to measure digestibility, urinary function, intestinal microbiomes, and intestinal fermentation products. They found no significant difference in the cats' large intestinal fermentation between the minced and whole mice diets. Total short-chain fatty acids, branched-chain fatty acid, and most biogenic amine concentrations were the same with both diets.

However, the scientists did see a significant positive change in the cats' digestive systems with the switch from the extruded diet to mice. Their gut microbiomes shifted from carb-eating Prevotellaceae microbes to protein-preferring Fusobacteriaceae microbes, with a reduced fecal acetic to propionic acid ratio.

> *"The results of this study indicate that food structure within a whole-prey diet is less important than the overall diet type, with major shifts in the microbiome and decrease in potentially harmful fermentation products when diet changes from extruded to mice," the scientists wrote. "This urges for careful consideration of the consequences of prey-based diets for gut health in cats."*

Biologically Appropriate Diet vs. Whole Prey Diet

It's amusing to me that the goal of the study was to determine whether cats did better on a diet of whole or minced mice, but the results showed that actually, either is highly preferable to dry cat food! The University of Ghent researchers seemed somewhat surprised at the significant improvement in the cats' microbiomes when they were transitioned from kibble to biologically appropriate diets.

Even more amusing is an article about the study in a pet food industry journal that states "Dog and cat owners may want to provide their pets with a 'biologically appropriate' diet. However, few people want to thaw a dead rat in their fridge or clean up blood and scraps of flesh after meal time." This suggests that the only way to serve biologically appropriate food to cats is to drop small dead rodents in their bowls!

While it's true that a small subset of people feed their animal companions whole prey diets, for most knowledgeable cat parents, "biologically appropriate" isn't about that. It's about feeding their obligate carnivore cats the fresh, meat-based diets they thrive on, instead of the ultraprocessed, carb laden foods that keep their gut microbiome unbalanced and unhealthy. These pet owners' freezers aren't full of intact small prey animals, but rather nutritionally balanced meat-based cat meals they purchased or prepared in their own kitchens.

Carbs and Cats

Felines aren't designed by nature to digest large amounts of carbohydrates. And since **domestic cats evolved to eat very low amounts of grains and starches**, simple common sense tells us that a diet high in carbohydrates has the potential to create ill health (example: the feline obesity and diabetes epidemics that can be reversed by eliminating starch from the diet).

The activity of a cat's liver enzymes is designed to handle protein and fat as energy sources, not starches. Most of the carbs in a cat's diet are ultimately stored as fat. Macronutrient self-selection research shows cats choose diets with less than 12% carbs; higher levels require the pancreas to produce more insulin and digestive enzymes to break them down. Many cats end up with chronic pancreatitis, **inflammatory bowel disease** (IBD) and diabetes as a result of chronic dietary abuse from excessive starch they cannot metabolically manage.

Not surprisingly, you won't find carbohydrate content listed on your bag of cat food because manufacturers keep it under wraps. Do this simple equation to find out how much sugar you're feeding: add up the amount of protein, fat, moisture, and ash (estimate 6% if it's not listed) and subtract from 100. That number is the percentage of carbs (sugar) found in your kitty's food.

It's easy to see why so many cats have chronic inflammatory and degenerative diseases — they're being fed a very unnatural diet of refined carbs their bodies aren't designed for.

Research shows that cats fed diets high in simple sugars become hyperglycemic (the first symptom of insulin resistance). Most **cats aren't attracted to sweet-tasting foods** (unlike dogs and people), and instead prefer food that tastes like animal products. This is one of several clear indicators of the strict carnivorous nature of felines.

Unprocessed Animal Tissue Is Perfect Nutrition for Cats

Felines have a unique nutritional biochemistry that is significantly different from other animals. As obligate carnivores, they must consume animal tissue to meet their very specific nutritional requirements. For example, kittens require 1.5 times the amount of protein as the young of other species, and adult cats need 2 to 3 times the amount other adult animals require. This is because omnivores and other mammals use most of the protein they consume not as a source of energy, but for growth and body maintenance.

Cats use protein for those purposes plus as a source of energy. When most animals are fed a low-protein diet, their bodies conserve amino acids to manage the deficit. But a cat's body must continue to use protein even when there's not enough in the diet, which is why protein malnutrition happens quickly in sick or injured cats, and those with anorexia.

In addition to their increased need for meat-based protein, cats also have a higher requirement for certain specific amino acids, such as taurine, found naturally in animal tissue. They also have a special requirement for vitamin A, which is available naturally only in animal tissue. They lack the intestinal enzymes necessary to convert B-carotene in plants to the active form of vitamin A. Vitamin A is essential for maintenance of vision, growth of bone and muscle, reproduction, and the health of epithelial tissues.

Vitamin D is also essential in the diets of cats because they lack the ability to synthesize it through their skin. The liver and fatty tissue of free-range animals is rich in vitamin D.

Domestic cats evolved from desert-dwelling ancestors, which is why they must get most of their water from the food they eat. Felines are not as responsive as other animals to sensations of thirst or dehydration. When fed a dry food diet, cats aren't driven to search for another source of water to make up the difference between what their bodies require and what their diet provides. This results in chronic mild dehydration, a condition that will ultimately lead to disease, especially of the lower urinary tract and **kidneys**.

Sources and References

[1] D'Hooghe, S. M-T.J. et al. British Journal of Nutrition, Volume 131, Issue 3, September 11, 2023

[2] PetfoodIndustry.com, February 21, 2024