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Researchers examine health of cats fed high-protein diets

University of Illinois researchers examine effect of dietary protein-to-carbohydrate ration on gut microbiomes of growing kittens

Researchers at the University of Illinois looked into the common belief that cats, carnivorous by nature, are healthiest when fed high-protein diets.

A team of researchers examined the effect of dietary protein-to-carbohydrate ratio on the gut microbiomes of growing kittens. “There are a lot of diets now, all natural, that have high protein and fat and not much dietary fiber or carbohydrates,” said animal sciences researcher, Kelly Swanson.

One month before mating, eight domestic shorthair female cats were randomly assigned to one of two dry diets: high-protein, low-carbohydrate (HPLC) or moderate-protein, moderate-carbohydrate (MPMC). When the kittens were born, they were housed with their mothers until they were 8 weeks old, weaned and then fed the same diets as their mothers.

After weaning, the more than 30 kittens were twin- and triple-housed within the dietary-group cages. Twelve of the kittens became part of the study, from which researchers took fecal samples at weaning and four and eight weeks after weaning. They extracted bacterial DNA and used bioinformatics techniques to estimate total bacterial diversity.

The researchers found important differences between the two groups in microbiome composition. As they had expected, levels of proteolytic bacteria that break down protein were higher for kittens on the HPLC diet and levels of saccharolytic bacteria that break down carbohydrates were higher for kittens on the MPMC diet.

In addition, researchers looked at relationships between the diets and physiology. The kittens fed the MPMC diet had high levels of bifidobacteria, which was linked to higher blood ghrelin levels. Ghrelin is a hormone that stimulates appetite and thus, may be linked to weight gain, according to researchers. Meanwhile, the bifidobacteria may promote better gastrointestinal health, as low levels in humans have been linked to inflammatory bowel disease.

Other bacteria found at higher levels in the MPMC kittens, including *lactobacilli*, are also linked to gut health. The researchers found a positive relationship between *lactobacilli*, blood cholesterol, and blood leptin levels. Leptin is the signal that tells the body to stop eating. Hence, *lactobacilli* may be linked to cholesterol metabolism, appetite and body weight regulation.

Although kittens fed the HPLC diet had lower levels of some health-promoting bacteria, including Bifidobacterium, *Lactobacillus* and Megasphaera, all the animals were healthy throughout the study.

“The cat is fairly unique metabolically,” Swanson said. “But when it comes to gut microbes, there are a lot of similarities to other species. If you feed the bacteria in a cat, dog or human colon the same substrate, there are probably going to be similar outcomes.”

The complete research has been published online in ***British Journal of Nutrition***.

Fonte: http://www.petfoodindustry.com/News/Researchers_examine_health_of_cats_fed_high-protein_diets.html