



Research and Clinical Care: The Forefront of Veterinary Nutrition

Faculty members in the Department of Molecular Biosciences build on the school's achievements in veterinary nutrition through sophisticated analyses of pet food diets, investigations of feline obesity, and studies of how calorie restriction may affect energy use and longevity. These experts also lead the renowned Clinical Nutrition Support Service, advising veterinarians and clients about specialized diets for pets with nutritional needs related to health, weight or age.

The vital role of taurine—The school's veterinary nutrition program has made such fundamental advances as the discovery of the vital role of the amino acid taurine in preventing feline dilated cardiomyopathy, a fatal heart condition. Pet food companies now add this essential nutrient to commercial cat food, saving countless lives.

Amino acid analysis aids in diagnosis—The Amino Acid Laboratory is a service and research laboratory in the Department of Molecular Biosciences. The laboratory specializes in the analysis of amino acids in biological samples from a variety of species, foods and feed ingredients. Amino acid analysis is often indicated in clinical patients to aid in the diagnosis of some cardiac and skin diseases. (<http://www.vetmed.ucdavis.edu/vmb/aal/index.cfm>)

Limits of home-prepared diets—Veterinary nutritionists evaluated recipes for diets formulated to support dogs and cats with chronic kidney disease, and demonstrated that none of the 67 recipes tested met all National Research Council recommended nutrient allowances for adult animals. Furthermore, many of them did not contain the dietary modifications scientifically supported to slow the progression of kidney disease. Thanks to these tests, veterinarians and pet owners now know that if they wish to cook for their pet with kidney disease they should seek a recipe that has been formulated by a veterinary nutritionist and not simply use one they found on the internet or in a book.

How much fiber is in my dog food?—Researchers analyzed 40 dry and canned canine maintenance diets to determine how the amount of fiber reported on the label (crude fiber) compared to what was in the actual product (total dietary fiber). The study showed that the amount of fiber reported on the label underrepresented the total dietary fiber in the product. The investigators encourage manufacturers to measure and report total dietary fiber on the label for a more accurate representation of what is in the bag or can.

Natural vs. prepared diets—Because of the increasing popularity of natural diets for cats and other wild captive carnivores, veterinarians examined the nutritional composition of select birds and small mammals consumed by pet or feral cats. The investigators reported that the nutritional value of a natural diet of birds and small mammals exceed the National Research Council's recommended allowances for total fat, crude protein and essential amino acids for felines at all life stages.

Not all fats are created equal—Using the knowledge that calorie restriction leads to cellular changes that may protect against the loss of muscle mass, strength and function due to aging, veterinary nutritionists explored the original notion that certain types of fat in a calorie-restricted diet may also have beneficial health effects on muscles. Experiments revealed that, in cells, dietary fish oil augments the protective effect of calorie restriction.

Just add water—Faculty researchers have concluded that the water content in a particular canned food diet induces decreases in body weight in cats, and animals did not consume as much. The impact of water content on the calorie content and food consumption may help promote weight loss in cats, but further long-term studies are needed.

Parenteral nutrition is effective—A retrospective case review of dogs and cats that received parenteral nutrition at the teaching hospital between 2000 and 2008 contributes new knowledge in the field. Investigators found that when complications occurred they tended to be minor and did not affect survival. Therefore, the authors conclude that this method can be effectively and safely used to meet the energy needs of most critically ill dogs and cats.

The Clinical Nutrition Support Service—This hospital-based service makes nutritional recommendations and individualized feeding plans for patients of the William R. Pritchard Veterinary Medical Teaching Hospital. Faculty also consult with referring veterinarians and clients regarding commercial diet recommendations, critical care nutrition options, nutritional consultation for metabolic diseases, and the evaluation and formulation of computer-generated, customized, home-prepared therapeutic diets.

http://www.vetmed.ucdavis.edu/vmth/small_animal/nutrition/index.cfm

Customized weight-loss programs—Obesity is the most common nutritional problem in dogs and cats in the United States, affecting 30-40 percent of dogs and cats. The service formulates customized weight-loss programs for dogs and cats to aid in the control of obesity-related disease and the achievement of a healthy body weight.

Residency training in demand—More board-certified veterinary nutritionists have been trained in the school's nutrition residency program than at any other program in the country. Following the successful completion of their residency training program and a rigorous examination, veterinarians become Diplomates of the American College of Veterinary Nutrition. These specialists in veterinary nutrition go on to work in academia, government, pet food and pharmaceutical industries, private practice and consulting.

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