

Preface



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Guest Editors

The study of small animal veterinary nutrition initially defined essential nutrients and minimal requirements needed to meet the basic biological needs of companion animals. It was later recognized that health and vitality could be further improved by optimizing nutrient levels to the lifestage, lifestyle, and breed of an individual animal. In addition, the metabolic derangements associated with certain disease states could be corrected or controlled by adjusting levels of key nutrients. Early examples of foods designed for disease management include those used for pets with kidney, heart, and intestinal disease. A mounting number of therapeutic foods have become available for several medical disorders from diabetes mellitus to canine cognitive dysfunction. Although therapeutic foods have been widely applied in veterinary practice, they are often used with an attitude of uncertainty (eg, “It may help and probably won’t hurt”). Previously, clinical nutrition was considered adjunctive therapy to common diseases, but in recent years it has emerged as a cornerstone of treatment based on the principles of grade 1 evidence-based medicine.

Recognition that veterinary clinical nutrition provides significant benefit to the treatment and management of disease is increasing. Improved nutrition has enhanced long-term health and increased longevity in our veterinary patients. Ongoing research and increased use of three key research methodologies has facilitated the understanding of clinical nutrition and its critical role in animal health and disease. These tools include broadened applications of (1) controlled clinical trials that test diet efficacy and put nutritional theory into practice; (2) epidemiological studies designed to detect nutritional associations to health and disease; and, more recently, (3) metabolomics and nutrigenomics, the study of nutritional influence on metabolism at the molecular and genomic level.

Several articles in this issue provide an overview of both basic and clinical research supporting recommendations for nutritional modification in the management of disease. Readers will note that remarkable clinical outcomes have been demonstrated following the nutritional treatment of disease. Studies of dietary modifications in renal disease have confirmed improved quality of life, slowed progression of disease, and increased survival compared with treatment with conventional medicine alone. Nutritional prevention of tartar and gingivitis, a contributor to systemic inflammation, is highlighted in the article on nutritional control of dental disease. Understanding the role of nutrition as both a cause and treatment of feline lower urinary tract disease has contributed to a reduction in the clinical recurrence of certain feline disorders, as well as having broad impact on the pet food industry. In addition, new nutritional strategies in the treatment of feline diabetes mellitus have resulted in high rates of disease remission and improved glucose control.

As described in this issue, several epidemiologic studies have identified association of certain diets, nutrients, or feeding practices with risk for disease. Several studies have highlighted health risks associated with obesity and the importance of weight control in our ever-growing population of overweight and obese pets. Risk factors associated with gastric dilation and volvulus, large breed growth disorders, and nutritional associations to canine cardiomyopathy have directed feeding recommendations and research leading to important nutritional discoveries. Taurine deficiency, once only a concern for cats, is now known to contribute to canine cardiomyopathy. Elucidation of foods and ingredient sources that reduce dietary taurine bioavailability or limit intake of precursor molecules is described within.

Advances in molecular biology have spawned new fields of study such as nutrigenomics, which defines how nutrients alter basic metabolic processes at the level of the genome. No longer are nutrients simple building blocks, cofactors, or enzymes, but instead regulators of cellular metabolism, gene transcription, or translation. New information continues to emerge on the molecular role of antioxidants in health, disease, and aging, as well as nutrient modification of inflammation and the immune response. The principles discussed in articles on antioxidants and immune function have a practical application in the control of pain and progression of osteoarthritis, use of protein hydrolysates in the management of adverse food reactions, and feeding animals under metabolic stress.

Nutritional advances continue to occur in all areas of veterinary medicine. Yet we are still faced with several very basic challenges. The ability to provide adequate nutrition to animals that are unwilling or unable to eat is often a major roadblock to optimal nutritional care. Conversely, the prevention and treatment of obesity is embroiled in numerous social and behavioral factors that sabotage owner and patient compliance, limiting long-term success. Finally, social attitudes concerning pets, nutrition, and food safety have prompted some pet owners to feed unconventional foods that may or may not be safe or nutritious.

To best serve the needs of patients and clientele, veterinarians must continue to stay abreast of nutritional advances in disease management and the pros and cons of nutritional controversies. Each author has contributed up-to-date scientific findings blended with practical recommendations that we hope will enhance the application of clinical nutrition in your daily practice. We sincerely thank the authors for sharing their time and expertise and look forward to new nutritional discoveries in the future.

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