



RESEARCH LEADERS

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ADRONIE VERBRUGGHE

Royal Canin Veterinary Diet Endowed Chair in Canine and Feline Clinical Nutrition

BETTER NUTRITION FOR HEALTHY PETS

Obesity prevention and treatment for companion animals are achieved through research and education

Understanding obesity and its impact on companion animals' lives

Obesity – a largely preventable disease – is rampant in companion animals, with serious health implications such as osteoarthritis, diabetes and even cancer. Researchers estimate more than half of cats and dogs in North America are obese, and the number is rising.

That's a trend Dr. Adronie Verbrugghe, the Royal Canin Veterinary Diet Endowed Chair in Canine and Feline Clinical Nutrition, is trying to stop. She's working towards improving nutrition in companion animals in three ways: studying canine and feline nutrition; developing the nutrition curriculum in the Doctor of Veterinary Medicine program; and providing a Clinical Nutrition Service in the Companion Animal Hospital at the Health Sciences Centre, Ontario Veterinary College (OVC).

"There is a lot we can do to address obesity and the problems associated with it," says Verbrugghe. "A team effort including the veterinary community as well as the pet food industry is important."

Dr. Adronie Verbrugghe holds the Royal Canin Veterinary Diet Endowed Chair in Canine and Feline Clinical Nutrition, the first of its kind in Canada. She advances knowledge available to veterinarians and students on how to provide excellent nutritional care for companion animals.

In obesity, as fat builds up within the body, a state of low-grade inflammation will occur, and animals will face increased risk of developing various diseases, reducing quality of life and lifespan. In feline nutrition, Verbrugghe is studying how food can affect metabolic pathways, inflammation and immunity, as well as the microbial environment in the gut – all of which are factors in obesity.

Verbrugghe studies aspects of obesity, such as understanding the abnormal physiological processes of the disease by comparing hormonal status, gene expression and the gut microbiome (the collection of micro-organisms living within the gut) of lean and obese cats.

Verbrugghe is seeking novel dietary solutions that can help prevent and treat feline obesity, work that may also have translational health benefits for both dogs and people. "I am committed to the One Health Initiative vision of improving health of all species, finding preventive and therapeutic solutions that can ultimately have impacts on the human obesity epidemic as well," she says.

One of Verbrugghe's current projects aims to characterize the feline obese microbiome and determine its link to energy metabolism, the process which converts the fuel received from



*OVC student Jaclyn Posluns (left) and Prof. Adronie Verbrugghe discuss research approaches to healthy companion animal diets.
Photo: Dean Palmer*

food into energy. To do so, Verbrugghe is comparing certain biological functions between lean and obese cats living in the same household, as well as evaluating the effect of energy restriction and weight loss on these functions.

This project will offer new insights into feline obesity.

As one of the few board-certified veterinary nutritionists in Canada, Verbrugghe is a leader in developing a companion animal nutrition curriculum for veterinary students in Ontario. The program builds upon crucial transferable skills, including how to help pet owners make informed nutritional choices for their pets.

Verbrugghe works through the Health Sciences Centre's Clinical Nutrition Service to help pet owners whose pets have complex needs with in-depth nutritional assessments and custom dietary plans, including advice on both commercial and homemade diets. OVC is the only veterinary school in Canada to offer this service.

"This service also has a teaching element by ensuring veterinary students know more about nutrition, and use that knowledge to educate pet owners to make better choices about their pets' nutrition," says Verbrugghe.

Verbrugghe's obesity research is supported by the Natural Sciences and Engineering Research Council, Canada Foundation for Innovation, Ontario Ministry of Research and Innovation, and various pet food companies.

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This profile was written by Joanne Pearce, Students Promoting Awareness of Research Knowledge (SPARK)

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