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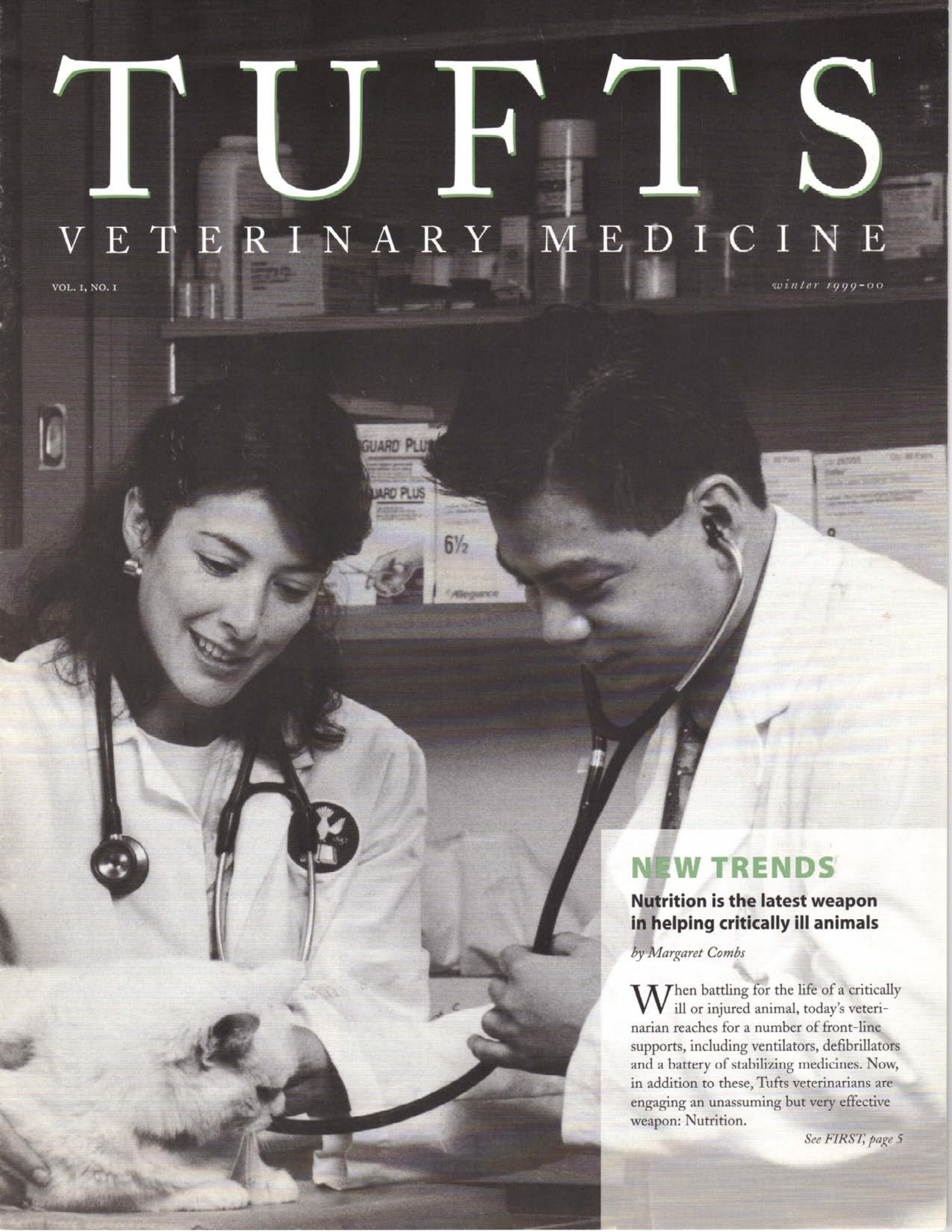

NEW TRENDS

Nutrition is the latest weapon in helping critically ill animals

by Margaret Combs

When battling for the life of a critically ill or injured animal, today's veterinarian reaches for a number of front-line supports, including ventilators, defibrillators and a battery of stabilizing medicines. Now, in addition to these, Tufts veterinarians are engaging an unassuming but very effective weapon: Nutrition.

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First residency in critical care nutrition belongs to Tufts

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Unlike 10 years ago, when a critically ill patient was allowed to go days or weeks without eating, Tufts' veterinary nutrition specialist Dr. Lisa Freeman now checks in on a daily basis soon after a patient's arrival. By delivering nourishment as early as possible, Freeman's goal is to bolster the odds of a successful recovery.

"We know that animals who are nutritionally supported are less prone to infection, better able to heal after surgery, and they're stronger," says Freeman, who holds degrees from both the School of Veterinary Medicine and the School of Nutrition Science and Policy at Tufts. "Critical care is an area in the hospital where nutrition can have a huge impact."

Advancing the link between nutrition and critical care, Tufts, with support from Ralston Purina Pet Products, this year established the world's first residency in veterinary emergency/critical care and nutrition. Funded through the Purina College Program, the four-year residency was matched to Dr. Daniel L. Chan, a 1998 graduate of Cornell University. Chan will spend the next four years conducting research and doing medical consultations at the Henry and Lois Foster Hospital for Small Animals as well as at Boston-area hospitals. Chan says his first phase of training at the veterinary school has allowed him to maximize the nutrition component in critical care.

"A lot of times I will know about a case because I took it in as an emergency doctor, and a few days later, I'll be consulting on the same patient as a nutritionist," says Chan. "I'm in a strong position to bridge the two."

Impact on Disease

Although research on animal nutrition is still young, initial studies and clinical results are proving that nutrition not only supports immune function but serves as an effective treatment for disease. Disorders of the skin, bowel, liver and kidneys are all significantly impacted by nutrition, Freeman says.

"We now know that if an animal has kidney disease, we can alter and supplement its diet to make the animal feel better and slow the disease," Freeman says. "This is also true for bladder stones, inflammatory bowel disease and diabetes."

PHOTO COURTESY OF RALSTON PURINA

Dr. Daniel L. Chan's four-year residency in emergency/critical care and nutrition at Tufts is the first of its kind in the world.

Freeman's own research has begun to reveal ways nutrition influences heart disease. In addition to a 1998 study, which found that certain fatty acids help maintain the muscle mass of dogs with cardiac disease, Freeman more recently conducted a study with Tufts veterinary cardiologists Don Brown and John Rush that found that low levels of antioxidants help control heart disease in dogs. A follow-up study will examine whether certain antioxidants (protective substances supplied through certain foods or nutritional supplements) play a role in preventing canine heart disease.

As the body of scientific literature expands linking nutrition to effective treatment and care, nutritionists continue to grapple with their biggest challenge: How to get nutrition into a critical patient who can't—or won't—eat. Severely injured animals are often too weak to chew, and in the case of dogs with liver disease, the animal may be nauseous or vomiting. Situations such as that require creative brainstorming with clinicians on a case-by-case basis, Chan says.

Feeding Strategies

"If we see an animal that has not eaten for a few days because of the disease process, we might go to the clinician and propose trying a different diet or propose alternative ways to get the nutrition in, such as a feeding tube or IV."

What proves to be successful for one case may be inappropriate, or even detrimental, in another, depending on the nature of the disease or injury. Cats that burn their mouths on toxic plants, for example, will come into Tufts' emergency unit unable to eat for several days to a week. Although IV nutrition can sustain the animal while the mouth heals, Chan has obtained a speedier recovery by placing a feeding tube into the neck so the animal can receive food directly into the esophagus. "This way the cat can better maintain weight and hydration and be back home within a few days," Chan says.

For other ailments, IV fluids are the best solution. One example is inflammation of the pancreas, which causes nausea and vomiting. Oral feeding can actually worsen the problem by stimulating pancreatic juices and continuing the nausea. "In severe cases, an animal cannot tolerate solid food for several days," Chan says, "so the best choice here is IV fluids."

Developing better methods of providing nutritional support as well as finding better ways to monitor and assess nutrition support are two of Chan's current research goals. "I will be asking myself: Can I make a difference when an animal's survival chances are small? Am I able to improve the odds even a little bit through nutrition?" says Chan, who believes his specialty will play an increasingly pivotal role in veterinary medicine. "That little bit might be just enough."