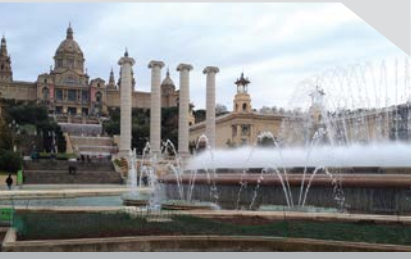
SYMPOSIUM CAPSULES

Nestlé Purina Companion Animal Nutrition Summit ▪ 26–28 March 2015 ▪ Barcelona, Spain

Nestlé Purina's Companion Animal Nutrition (CAN) Summit is a scientific meeting where experts gather from around the world to explore the important topic of nutrition in veterinary medicine. This year the CAN Summit focused on obesity, a significant health issue for pets.

Additional CAN Capsules are available online at cliniciansbrief.com/2015-CAN-capsules



FOCUS

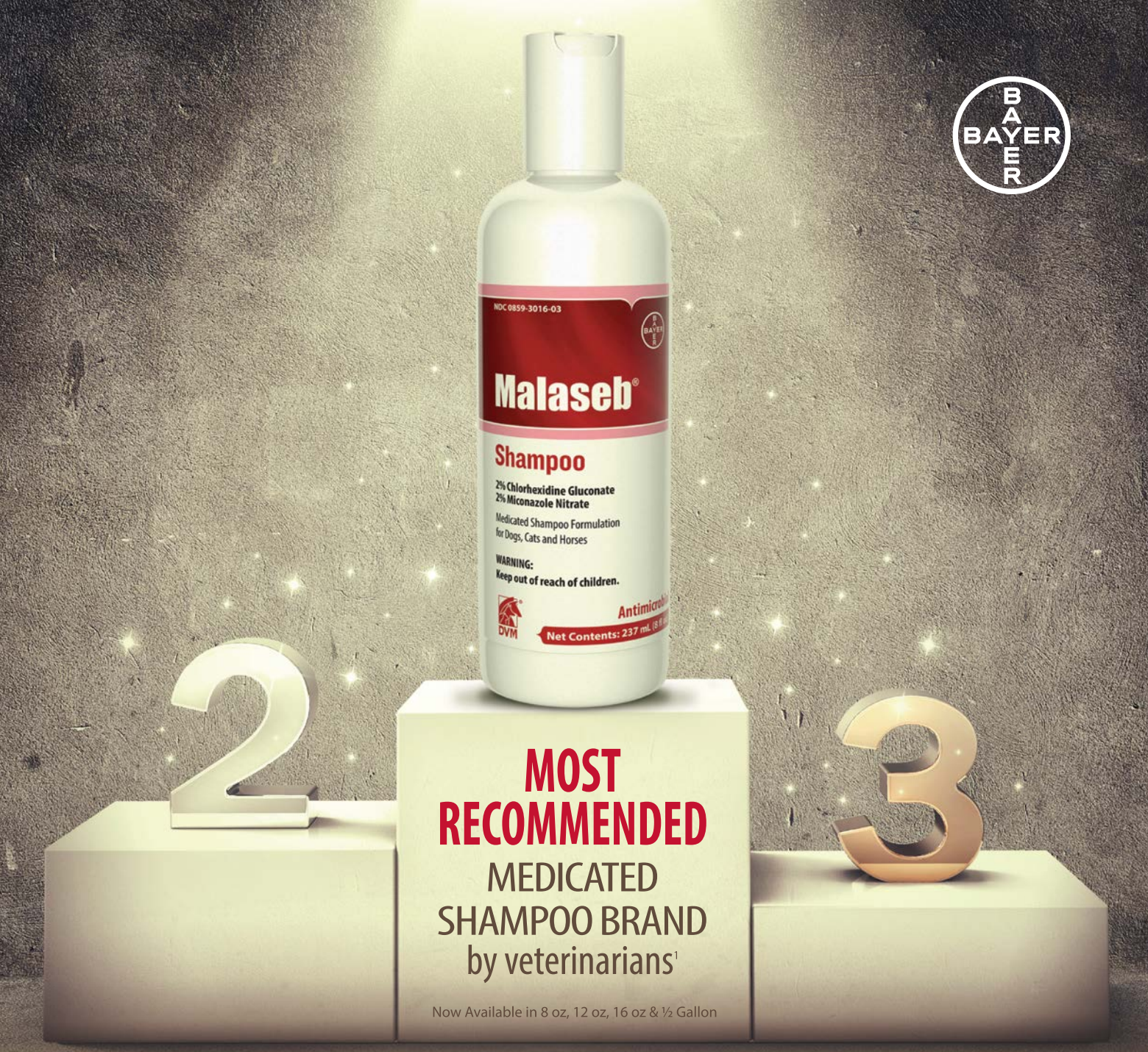
Intermittent Caloric Restriction: A New Way to Feed Cats for Weight Loss

Intermittent caloric restriction (ICR) has been extensively studied in overweight and obese humans and has shown benefits in delaying aging, enhancing lifespan, and delaying or preventing cancer. This study compared the effect of an ICR weight-loss plan with the more traditional CCR plan in 28 obese or overweight cats with body condition scores (BCS) of 7/9 or higher when fed a high-protein, low-fat diet.

Cats in the CCR group were fed 75% of their baseline maintenance energy requirement (MER) for 6 months. Cats in the ICR group were fed 75% of their MER for the first 2 weeks of the month and 100% of their baseline MER for the last 2 weeks of the month for 12 months. It was found that within the study period, only 35.71% of cats in the CCR group reached ideal BCS, whereas 81.82% of cats in the ICR group reached ideal BCS. When weight loss was calculated on an equal caloric-restriction basis, the ICR group had a significantly higher rate of body-fat loss than the CCR group. Direct monthly rates of percentage body-fat and body-weight loss were similar despite the increased caloric intake in the ICR group. This indicates that cats in the ICR group may maintain higher energy expenditure than cats in the CCR group. Lean-body mass was well-maintained in both groups. These results indicate that ICR may be more effective than CCR at promoting healthy body-fat loss.—*Pan Y*

Plasma Cytokines in Overweight Dogs

Chronic low-grade inflammation in obesity involves increased production of proinflammatory and chemotactic cytokines, both of which contribute to insulin resistance and related comorbidities, including cardiovascular disease, diabetes mellitus, and osteoarthritis. This study evaluated whether weight loss would increase antiinflammatory and antioxidant factors and decrease proinflammatory cytokines. Eighteen overweight beagles were fed a high-protein, low-calorie dry dog food at 25% of their individual maintenance energy requirement over 6 months. All dogs reached their ideal weight by the end of the study and were healthier as defined by decreased fat mass and improved insulin sensitivity. The hormone leptin and several proinflammatory cytokines and growth factors all decreased significantly with weight loss. These findings concur with human, rodent, and other canine studies that suggest weight loss improves low-grade inflammation.—*Satyaraj E*



Malaseb®

Gentle on skin, but harsh on skin pathogens

The active ingredients in Malaseb® Shampoo kill susceptible skin pathogens within minutes *in vitro*.[2,*] A systematic review in 2012 found that there was a sufficient body of "good evidence" to recommend the use of 2% Chlorhexidine in combination with 2% Miconazole against *Malassezia* infections in dogs.[3] With no dyes or added fragrances and available in a variety of sizes, Malaseb® should be your choice for the topical management of susceptible skin pathogens.

For more information, visit BayerDVM.com, call your local Bayer Sales Representative, contact your preferred distributor or call Bayer Customer Service at 1-800-633-3796.

[1] Reference on file. Bayer HealthCare, Animal Health.
[2] Reference on file. Bayer HealthCare, Animal Health.
[3] Mueller RS, Bergvall K, Bensignor E, et al. (2012). A review of topical therapy for skin infections with bacteria and yeast. *Vet Dermatology.* 23:330-341.

* Studies were performed using Malaseb® Concentrate Rinse (0.2% Miconazole and 0.2% Chlorhexidine); *Staphylococcus pseudintermedius (also known as Staphylococcus intermedius), Pseudomonas aeruginosa, Malassezia pachydermatis;* The clinical significance of *in vitro* data has not been determined.

DVM®

Insulin Resistance & Metabolic Adaptability in Obese Cats: 2 Unlikely Partners

Obese individuals are at increased risk for diabetes mellitus, partly because of increased insulin resistance in which pancreatic beta cells still produce insulin, but peripheral tissues do not respond normally to the insulin. Despite similar instances of obesity in humans and cats, the incidence of diabetes mellitus is much higher in humans, suggesting that obese cats appear to maintain euglycemia and adapt their metabolic needs. This report describes using the euglycemic-hyperinsulinemic clamp, the gold standard method for measuring insulin sensitivity, to calculate whole-body glycolysis and total-body glycogen synthesis. It was found that for each kilogram of body weight increase in cats, insulin resistance increased by approximately 15% to 30%. However, despite the insulin resistance, insulin output increased and fasting plasma glucose levels remained normal; this highlights that peripheral insulin resistance is a poor indicator of glucose tolerance. Further investigation into hepatic metabolic pathways revealed that obese cats have a lower endogenous glucose production (EGP) because of lower glycogenolysis and/or gluconeogenesis; this naturally decreased EGP helps offset the effect of insulin resistance on peripheral glucose uptake. Additionally, it was found that the hepatic Krebs cycle is more active in female obese cats along with an increase in pyruvate cycling that helps protect against excessive EGP; this provides a mechanism as to why fewer female cats are diabetic than males. In prediabetic cats, there appears to be a quick switch from the euglycemic to the hyperglycemic state that indicates rapid development of diabetes mellitus, likely from hepatic insulin resistance and decreased beta cell numbers and function.—*Hoenig M*

The Paradox of Healthy Obesity

Obesity, defined as a body mass index of >30 kg/m^2 in humans, is typically associated with metabolic dysfunction and increased inflammation. Unhealthy obese individuals typically exhibit at least 3 risk factors (eg, type 2 diabetes mellitus, dyslipidemia, hypertension) for metabolic syndrome. There are some individuals (estimated at 10% to 30% prevalence), however, who have high insulin sensitivity, no sign of hypertension, and normal lipid, inflammatory, and hormonal profiles (ie, low triglycerides and C-reactive protein concentrations, high HDL cholesterol and adiponectin concentrations). These individuals seem to be at less risk for cardiovascular and metabolic disease than "unhealthy" obese individuals. One proposed hypothesis for the mechanism behind this protective effect of obesity is extra lean-body mass associated with obesity (ie, obese individuals have both extra adipose and muscle tissue) may actually provide a greater reserve in catabolic diseases. A better understanding of this metabolically benign obesity is important in terms of formulating individual weight-loss plans as well as for future research.

In veterinary medicine, research is beginning to identify cases in which there may be an association between higher body weights and survival. For example, in cats with congestive heart failure, shorter survival times were associated with low-body-weight individuals than those with moderate or higher body weights. It is still unclear if a clinically applicable method to assess insulin sensitivity could be beneficial in veterinary medicine in order to better formulate individual weight-loss programs.—*Armstrong PJ*

Effective Strategies, Dialogues, & Tools for a Successful Weight-Management Program

As little as 15% extra body fat can shorten a dog's life expectancy and is linked to a host of medical conditions. To combat the health issues related to overweight animals in their practice, a clinic in Wisconsin organizes a yearly pet weight-loss contest to motivate clients. A history is taken and the weight, body condition score (BCS), and ideal body weight (IBW) are recorded. Clients are carefully questioned about their beliefs on food, family issues that may play a role in their pets' condition, and any related biases they may hold. Because these are often emotional subjects, veterinarians must proceed with sensitivity. Once an IBW has been determined, food and calorie recommendations (usually 60% to 80% of resting energy requirement of IBW for dogs, 50% to 70% for cats) are made, and clients are sent home with tools for success (eg, measuring cups, protein and calorie comparisons for food and treats). The contest is organized around a wellness fair kickoff and final weigh-in along with 2 midpoint weigh-ins. Fun components include online updates of contestant progress and donations made to rescue organizations for every pound lost. Donations from pet food companies and veterinary biological companies help defray costs and provide prizes to the winners. Although the contest takes great time and effort from the team, it boosts client bonds and alliances with local rescue organizations. The focus on weight management in the practice continues year-round.—*Lambrecht KJ*

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