BLUE BUFFALO RESEARCH PUBLICATIONS

11/16/21

Blue Buffalo began with a mission to provide the most valued health benefits and nutritional advances to our consumer's pets. Today these benefits and advances are based on ongoing research, both internal and external, as well as extensive product testing.

We are committed to disseminating the results of our product and technology research with veterinarians and nutrition scientists via presentations at conferences and submissions to peer-reviewed journals. We believe that sharing these studies helps advance the fields of veterinary medicine and nutrition, as well as promotes pet health and well-being. We are proud to share this summary of our publications.

Published Research

Tefft KM et al. Effect of a struvite dissolution diet in cats with naturally occurring struvite urolithiasis. J Fel Med Surg. 2020. https://doi.org/10.1177/1098612X20942382

Frantz NZ et al. Novel food with mixed soluble fiber promotes quicker resolution of acute diarrhea in shelter kittens. J Anim Physiol Anim Nutr. 2020; 104;406

Frantz NZ et al. Novel food with mixed soluble fiber promotes quicker resolution of acute diarrhea in shelter puppies. J Anim Physiol Anim Nutr. 2020; 104;406

Franz NZ et al. Novel food with mixed soluble fiber promotes improved stool scores in cats with chronic diarrhea. J Anim Physiol Anim Nutr. 2020; 104; 406

Presented Abstracts

Brewer L et al. Performance of sunflower protein meal and dried yeast as secondary protein sources in feline diets. In Program 2021 Annual Meeting ASAS. Lexington, KY. July 14-17, 2021.

Brewer L et al. Performance of sunflower protein meal and dried yeast as secondary protein sources in canine diets. In Program 2021 Annual Meeting ASAS. Lexington, KY. July 14-17, 2021.

Panasevich M et al. Dietary ground flaxseed increases serum alpha-linolenic acid concentrations in adult cats. In Proceedings AAVN Clinical Nutrition & Research Symposium. Virtual, June 2-3, 2021.

Panasevich M et al. Serum biomarkers predict improved body composition in overweight dogs fed a therapeutic diet. In Proceedings AAVN Clinical Nutrition & Research Symposium. Virtual, June 2-3, 2021.

Panasevich M et al. Improved body composition is linked to serum biomarkers in overweight cats fed a therapeutic diet. In Proceedings AAVN Clinical Nutrition & Research Symposium. Virtual, June 2-3, 2021.

Panasevich M et al. Prebiotics plus novel bacterial-derived prebiotic shift fecal microbiota, metabolites, and IgA in healthy adult dogs. In Program Global Animal Nutrition Summit. University of Guelph, August 2020.

Panasevich M et al. Inclusion of Lemna as a plant-based protein ingredient in dog and cat diets. In Proceedings Amer Soc Anim Science Annual Meeting. Virtual, July 19-23, 2020.

Frantz NZ et al. Reduced protein food with L-carnitine maintains lean mass and renal health in senior cats. In Proceedings AAVN Clinical Nutrition & Research Symposium. Virtual, June 10-11, 2020.

Frantz NZ et al. Novel food containing antioxidants and fish oil improves mobility scores in arthritic dogs. In Proceedings AAVN Clinical Nutrition & Research Symposium. Virtual, June 10-11, 2020.

Tefft KM et al. A moderate sodium novel dry diet dissolves naturally occurring struvite cystoliths in cats. In Proceedings AAVN Clinical Nutrition & Research Symposium. Virtual, June 10-11, 2020.

Lewis T et al. Evaluation of a new hydrolyzed salmon-based diet in dogs with suspected cutaneous adverse food reaction: a multi-center randomized triple-blinded clinical trial. In Proceedings of the North American Veterinary Dermatology Forum (NAVDF); 2019 April 10-13; Austin, Tx.

PUBLISHED RESEARCH

Tefft KM et al. Effect of a struvite dissolution diet in cats with naturally occurring struvite urolithiasis. J Fel Med Surg. 2020. https://doi.org/10.1177/1098612X20942382

Abstract

Objectives

The aim of the study was to determine the efficacy of the low struvite relative supersaturation diet in dissolution of feline struvite cystoliths.

Methods

This was a prospective, open-label, two-center study. Twelve client-owned cats were enrolled based on the radiographic appearance of their uroliths and urinalysis parameters. Cats were fed the test diet exclusively for up to 56 days. Cats were radiographed every other week until radiographic evidence of dissolution occurred or the end of the study period was reached. Cats with radiographically apparent uroliths at the end of the study period underwent cystotomy for stone retrieval and analysis.

Results

Nine of the 12 cats completed the study. Eight experienced radiographic dissolution; seven of these had complete dissolution within the first month of treatment. One cat, whose owner declined cystotomy after partial dissolution at day 56, had complete radiographic resolution at 70 days of treatment. Two calcium oxalate urolith cores were removed from a cat that had partial radiographic dissolution.

Conclusions and relevance

The test diet was successful in dissolving suspected struvite cystoliths. As this diet is suitable for maintenance feeding of adult cats, it may be a suitable choice for long-term prevention of feline struvite urolithiasis.

Frantz NZ et al. Novel food with mixed soluble fiber promotes quicker resolution of acute diarrhea in shelter kittens. J Anim Physiol Anim Nutr. 2020; 104;406

Novel food with mixed soluble fibre promotes quicker resolution of acute diarrhoea in shelter kittens

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A study was conducted to determine whether a test food containing mixed soluble fibre from apple pomace, flaxseed, cranberries, pumpkin and inulin improves the number of days to resolve acute diarrhoea in shelter kittens. Kittens were housed at an animal shelter (Rancho Santa Fe, California) and offered food and water ad libitum. All animal use for this study protocol was first approved by the facility's Institutional Animal Care and Use Committee and followed throughout the study. Twenty-nine female and 35 male kittens (average age, 0.36 years ± 0.29) noted by the facility to have acute uncomplicated diarrhoea were randomly assigned to be fed a commercially available, low soluble fibre control fool (protein 35.5%, fat 14.0%, crude fibre 1.1% and soluble fibre 0.2% on a dry matter basis) or the mixed soluble fibre test food (protein 39.8%, fat 16.1%, crude fibre 3.0% and soluble fibre 1.6% on a dry matter basis) for 7 days, with stool scored twice per day. Average stool scores over 7 days (1-7 scale, where 1 is firm, and 7 is diarrhoea) and days to resolution (consecutive scores of 4 or better) were analysed in Minitab v18 using ANOVA. Compared to feeding control food, feeding the mixed soluble fibre food resulted in similar average stool scores (4.58 vs 4.42, $P = .19$), but significantly fewer days to resolution of diarrhoea (5.46 vs 4.14, $P < .01$). Overall, positive results on time to resolution of diarrhoea were observed in shelter kittens when fed a mixed soluble fibre food.

Frantz NZ et al. Novel food with mixed soluble fiber promotes quicker resolution of acute diarrhea in shelter puppies. J Anim Physiol Anim Nutr. 2020; 104;406

Novel soluble fibre food promotes stool improvements and resolution of acute diarrhoea in shelter puppies

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A study was conducted to determine whether a test food containing mixed soluble fibre from apple pomace, flaxseed, cranberries, pumpkin and inulin improves the number of days to resolve acute diarrhoea in shelter puppies. Puppies were housed at an animal shelter (Rancho Santa Fe, California) and offered food and water ad libitum. The study protocol was approved by the facility's Institutional Animal Care and Use Committee. Twenty-three female and 23 male puppies (average age, 0.37 years ± 0.52) noted by the facility to have acute uncomplicated diarrhoea were randomly assigned to be fed a commercially available, low soluble fibre control food (protein 23.9%, fat 14.1%, fibre 3.3%, soluble fibre 0.3% on a dry matter basis) or mixed soluble fibre test food (protein 27.1%, fat 14.1%, fibre 4.3%, soluble fibre 2.0% on a dry matter basis) for 7 days with stool scores recorded twice daily. Average stool scores over 7 days (1-7 scale where 1 is firm, and 7 is diarrhoea) and days to resolution (consecutive scores of 4 or better) were analysed in Minitab v18 using ANOVA. Compared to feeding control food, feeding the test food resulted in better average stool scores (3.38 vs 3.78, $P < .01$) and resolved diarrhoea quicker (3.43 days vs 4.43 days, $P < .02$). Overall, positive results on average stool scores and time to resolution of diarrhoea were observed in shelter puppies fed a food with mixed soluble fibre.

Franz NZ et al. Novel food with mixed soluble fiber promotes improved stool scores in cats with chronic diarrhea. J Anim Physiol Anim Nutr. 2020; 104; 406

Novel food with mixed soluble fibre promotes improved stool scores in cats with chronic diarrhoea

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A study was conducted to determine whether test food containing mixed soluble fibre from apple pomace, flaxseed, cranberries, pumpkin and inulin improves stool quality in cats with chronic diarrhoea. The study protocol was first approved by the facility's Institutional Animal Care and Use Committee (Ontario, Canada) and was followed throughout. Seven female and twelve male cats (average age, 10.3 ± 3.5 years; 5.2 ± 1.8 kg average body weight) noted by the facility to have chronic diarrhoea completed the study after three cats were removed due to abnormal results on screening for pancreatic disease. A commercially available, low soluble fibre control food (protein 35.5%, fat 14.0%, crude fibre 1.1% and soluble fibre 0.2% on dry matter basis) or the mixed soluble fibre test food (protein 39.8%, fat 16.1%, crude fibre 3.0% and soluble fibre 1.6% on dry matter basis) was offered to each cat for 28 days in a randomized crossover study design. Average stool scores and categorical evaluation of stool scores (1-5 scale where 1 is firm, and 5 is diarrhoea) were analysed in Minitab v18 using ANOVA and chi-square respectively. Compared to control, feeding the test food resulted in significantly ($P < .03$) better average stool scores (average, 2.98 vs 3.15), categorically higher ($P < .001$) acceptable stool scores (scores 1-3; counts, 251 vs 200) and fewer poor stool scores (scores 4-5; counts, 112 vs 172). Overall, cats with chronic diarrhoea had improved stool scores when fed a mixed soluble fibre food, compared to low soluble fibre food.

Brewer L et al. Performance of sunflower protein meal and dried yeast as secondary protein sources in feline diets. In Program 2021 Annual Meeting ASAS. Lexington, KY. July 14-17, 2021.

The objectives of this study were to assess graded inclusions of sunflower protein meal (SPM; crude protein: 54%, crude fat: 11%, crude fiber: 4%) and dried yeast (DY; crude protein: 50%, crude fat: 3%, crude fiber: 2%) on nutrient digestibility, stool quality, and palatability in adult cats. Both SPM and DY were included at 5% and 10% in replacement of pea protein in a high-protein, chicken-based feline diet to maintain equal macronutrient concentrations across all test diets (formulated to 41% crude protein, 18% crude fat, 3% crude fiber). The study was approved and followed by the facility's Institutional Animal Care and Use Committee. A standard 2-bowl palatability test over a 2-day period was executed with adult cats (n = 30 each) to determine intake ratios between test diets (5% and 10% SPM or 5% and 10% DY), and test diets vs. control. Total tract nutrient digestibility was evaluated (n = 8 per diet) with 5 days of diet acclimation followed by 5 days of total fecal collection. Stool quality was evaluated on a 1-5 scale, where 1 = hard/formed and 5 = non-formed/diarrhea. All data were analyzed by ANOVA (SAS v9.4) and T-tests post-hoc (Minitab 18). Palatability and stool quality were similar ($P > 0.05$) between all diets. Protein digestibility was lower for DY-containing diets, compared with control (5% DY at $P = 0.0083$ and 10% DY at $P = 0.0336$), but not significantly different for SPM diets ($P > 0.05$). However, average protein digestibility was >88% across all diets. The alternative protein sources tested showed merit for inclusion to diversify ingredient sources while maintaining palatability in cat diets.

Brewer L et al. Performance of sunflower protein meal and dried yeast as secondary protein sources in canine diets. In Program 2021 Annual Meeting ASAS. Lexington, KY. July 14-17, 2021.

The objectives of this study were to assess graded inclusions of sunflower protein meal (SPM; crude protein: 54%, crude fat: 11%, crude fiber: 4%) and dried yeast (DY; crude protein: 50%, crude fat: 3%, crude fiber: 2%) on nutrient digestibility, stool quality, and palatability in adult dogs. Both SPM and DY were included at 5% and 10% in replacement of pea protein in a high-protein, chicken-based canine diet to maintain equal macronutrient concentrations across all test diets (formulated to 35% crude protein, 15% crude fat, 3% crude fiber). The study was approved and followed by the facility's Institutional Animal Care and Use Committee. A standard 2-bowl palatability test over a 2-day period was executed with adult dogs (n = 30 each) to determine intake ratios (IR) between test diets (5% and 10% SPM or 5% and 10% DY), and test diets vs. control. Total tract nutrient digestibility was evaluated (n = 8 per diet) with 5 days of diet acclimation followed by 5 days of total fecal collection. Stool quality was evaluated on a 1-5 scale, where 1 = hard/formed and 5 = non-formed/diarrhea. All data were analyzed by ANOVA (SAS v9.4) and T-tests post-hoc (Minitab 18). With $P < 0.05$ considered statistically significant, no differences were observed between diets for protein digestibility (all >84% avg) or stool scores (all averages between 2.25-2.50). For DY-containing diets, no significant differences in IR were noted vs. control (IRs = 35:65, 5% DY vs control; 40:60, 10% DY vs. control). However, palatability of control was preferred vs. SPM-containing diets ($P < 0.05$; IRs = 19:81, 5% SPM vs. control; 29:71, 10% SPM vs. control). Overall, detriments in protein digestibility and stool quality were not evident with DY and SPM, suggesting their viability as alternative protein sources in dog diets.

Panasevich M et al. Dietary ground flaxseed increases serum alpha-linolenic acid concentrations in adult cats. In Proceedings AAVN Clinical Nutrition & Research Symposium. Virtual, June 2-3, 2021.

Dietary Ground Flaxseed Increases Serum Alpha-Linolenic Acid Concentrations in Adult Cats

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We evaluated effects of dietary ground flaxseed on fecal and serum alpha-linolenic acid (ALA) concentrations and nutrient digestibility in female and male adult cats (n=20; 1-5 years old; 3.88 ± 0.82 kg BW). We hypothesized that adding ground flaxseed would increase serum and fecal ALA, compared with feeding no flax, without changing nutrient digestibility. The study protocol was approved by the facility's Institutional Animal Care and Use Committee. Cats were fed added-flax (test, n=10) or no-flax (control, n=10) diets (2.66 vs. 0.78% ALA of total fatty acids; diets formulated to crude protein 35%, fat 20%, fiber 3% as-fed) twice daily to maintain body weight for 28 days. Fecal collections were conducted on days 23–27 for total-tract nutrient digestibility and long-chain fatty acid (LCFA) analyses. Serum was collected on days 0, 14, and 28 for LCFA analysis. All data were analyzed by ANOVA (SAS v9.4, Cary, NC) with a Tukey's mean separation correction. Test-fed cats, compared with control-fed, had greater ($P<0.05$) serum ALA after 14 days (4.00 vs. 0.71µg/ml) and 28 days (7.83 and 3.67µg/ml). Fecal ALA (530 vs. 109µg/ml), as well as dry matter (80.3 vs. 80.6%), protein (82.4 vs. 82.8%), fat (91.1 vs. 91.5%), and ALA (97.8 vs. 97.5%) digestibility were not different. However, metabolizable energy was greater in the test vs. control diet (4.18 vs. 3.91kcal/g; $P<0.05$). Overall, these data suggest that adding ground flaxseed to cat diets increases serum ALA within 28 days, with no detriments to nutrient digestibility.

Panasevich M et al. Serum biomarkers predict improved body composition in overweight dogs fed a therapeutic diet. In Proceedings AAVN Clinical Nutrition & Research Symposium. Virtual, June 2-3, 2021.

Serum Biomarkers Predict Improved Body Composition in Overweight Dogs Fed a Therapeutic Diet

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In three studies, we utilized female and male overweight (body condition score 3.5/5; body fat (BF) ≥ 29%) adult dogs (n=15 per study; 8.25 ± 1.67 years old; 14.82 ± 1.92 kg BW, avg ± SD) fed a therapeutic diet (Blue Buffalo Natural Veterinary Diet® Weight Management + Urinary Care) to evaluate changes in serum biomarkers [leptin, insulin, glucagon ghrelin, peptide-YY (PYY), pancreatic polypeptide (PP), glucagon-like peptide-1 (GLP-1), glucose-dependent insulinotropic polypeptide (GIP), insulin-like growth factor-1 (IGF-1)] over 60 days and their links to body composition (DEXA). All studies were approved and followed by the facility's Institutional Animal Care and Use Committee. Stepwise regression analysis was used to model serum biomarker and body composition changes (α set 0.10), and paired t-test for mean differences in biomarkers over time. Data were analyzed in SAS (v9.4, Cary, NC; P≤0.05 considered significant; P≤0.10 trend). Dogs lost 16.3% of their initial body weight and 39.6% of initial body fat by day 60 (P<0.05). Dogs exhibited increased (P<0.05) serum ghrelin and decreased (P<0.05) PP, PYY, insulin, leptin, and IGF-1 from days 0 to 60. Serum leptin, PP, and ghrelin were most predictive (P<0.05) for %BF over 60 days (model R=0.4322). Serum ghrelin and glucagon were the strongest predictors (P<0.05) of lean body mass % changes, while IGF-1and PP tended (P<0.10) to be associated with % lean body mass changes (model R=0.4132). These data demonstrate that weight loss over 60 days elicited profound effects on serum biomarkers that correlated with body composition outcomes.

Panasevich M et al. Improved body composition is linked to serum biomarkers in overweight cats fed a therapeutic diet. In Proceedings AAVN Clinical Nutrition & Research Symposium. Virtual, June 2-3, 2021.

Improved Body Composition is Linked to Serum Biomarkers in Overweight Cats Fed a Therapeutic Diet

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Two studies were conducted utilizing female and male overweight (body condition score 3.5/5; body fat (BF) ≥ 28%) adult cats (n=26 total; 8.45 ± 2.86 years old; 5.37 ± 0.97 kg BW, avg ± SD) fed a therapeutic diet (Blue Buffalo Natural Veterinary Diet® Weight Management + Urinary Care) to evaluate changes in serum biomarkers [leptin, insulin, ghrelin, glucagon, peptide-YY (PYY), pancreatic polypeptide (PP), C-reactive protein (CRP), and insulin-like growth factor-1 (IGF-1)] over 60 days and their links to body composition (DEXA). All studies were approved and followed by the facility's Institutional Animal Care and Use Committee. Stepwise regression analysis was used to model serum biomarker and body composition changes (α set 0.10), and paired t-test for mean differences in biomarkers over time. Data were analyzed in SAS (v9.4, Cary, NC; P≤0.05 considered significant; P≤0.10 trend). Cats lost 12.5% of their initial body weight and 36.8% of their initial body fat by day 60 (P<0.05). Cats exhibited decreased (P<0.05) serum ghrelin, glucagon, insulin, PP, PYY, and IGF-1 from days 0 to 60. Serum leptin tended (P<0.10) to decrease over 60 days of weight loss. Serum IGF-1, insulin, CRP, and PYY were most predictive (P<0.05) for %BF over 60 days of feeding (model R=0.7028). Serum IGF-1, insulin, PYY, and CRP were the strongest predictors (P<0.05) of lean body mass % changes (model R=0.6737). These data demonstrate that dietary-induced body composition improvements over 60 days elicit profound effects on inflammatory and hormone biomarkers.

Panasevich M et al. Prebiotics plus novel bacterial-derived prebiotic shift fecal microbiota, metabolites, and IgA in healthy adult dogs. In Program Global Animal Nutrition Summit. University of Guelph, August 2020.

Prebiotics plus novel bacterial-derived prebiotic shift fecal microbiota, metabolites, and IgA in healthy adult dogs

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A study of diets containing a novel bacterial-derived prebiotic (Culbac; TransAgra, Storm Lake, IA) and mixed prebiotics was done to evaluate fecal microbiota, fecal metabolites, and gut immune health in healthy female and male adult dogs (n=24; 5.74 ± 2.18 years; 9.30 ± 1.32 kg). The study protocol was first approved by the facility's Institutional Animal Care and Use Committee (Susquehanna, PA) and followed throughout. Four test diets (control, Culbac, prebiotics, and prebiotics + Culbac [Crude Protein 25%, Fat 14%, Fiber 10% as-fed]) were fed twice daily to maintain body weight for 21 days in a randomized-crossover design. Fresh fecal samples were collected on days 0 and 21 for IgA and microbiota evaluation (16S rRNA V4 region and qPCR), and on day 21 for fecal metabolites analysis. Data were analyzed by ANOVA (SAS v9.4, Cary, NC) for between-treatment effects, and paired t-test or Wilcoxon for time effects. Fecal E. coli was significantly ($P < 0.05$) lower with the prebiotics diet versus control, while fecal Fusobacterium was lower ($P < 0.05$) with both prebiotic-containing diets versus control. Fecal Lactobacillus significantly increased ($P < 0.05$) from baseline with the prebiotics diet. Both prebiotic-containing diets elicited greater ($P < 0.05$) fecal acetate, propionate and delta IgA, versus control diet. The prebiotics + Culbac diet decreased ($P < 0.05$) fecal metabolites isovalerate, isobutyrate, phenol, and indole versus control. Overall, prebiotics and prebiotics + Culbac elicited changes in fecal metabolites, IgA, and microbiota that suggest gut health benefits.

Panasevich M et al. Inclusion of Lemna as a plant-based protein ingredient in dog and cat diets. In Proceedings Amer Soc Anim Science Annual Meeting. Virtual, July 19-23, 2020.

PSVI-25 Inclusion of Lemna as a plant-based protein ingredient in dog and cat diets.

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Our objective was to evaluate the inclusion of a novel plant-based protein (Lemna; MC Select; Parabel®; Vero Beach, FL) in dog diets at 0, 5, and 10% and cat diets at 0, 10 and 15% for palatability, stool quality, and nutrient digestibility. We hypothesized that Lemna would be a viable protein source in both cat and dog diets by showing no detriments to nutrition outcomes. All feeding tests were conducted at an independent research facility (Susquehanna, PA). A standard 2 bowl palatability test over a 2-day period was done with adult dogs and cats (n = 30 each) to determine intake ratios (IR) between test diets (Lemna -containing diets) and control (0% Lemna) diet. Total tract nutrient digestibility was conducted with 18 adult dogs and 21 adult cats (n=6–7 per diet) with 5 days of diet acclimation followed by 5 days of total fecal collection. Stool quality was evaluated on a 1–5 scale where 1= non-formed/diarrhea and 5= hard, formed. Palatability data was analyzed via Wilcoxon Signed Rank, and digestibility and stool quality data were analyzed by ANOVA with a Tukey's post-hoc means separation (SAS version 9.4). Intake ratios in cats between 10% Lemna and control were significantly ($P < 0.05$) in favor of control, while no difference was observed between 15% Lemna and control. For dogs, 5% and 10% Lemna had significantly ($P < 0.05$) lower IR demonstrating a preference to control. Both cats and dogs fed Lemna diets had acceptable stool quality (3.42 avg for cat and 3.34 avg for dog). No detriments in nutrient digestibility were observed in dogs fed 5% and 10% Lemna; however, cats fed 10% and 15% Lemna had significantly ($P < 0.05$) lower dry matter, protein, and energy digestibility versus control. In conclusion, these data suggest more development is needed for Lemna inclusion in companion animal diets.

Frantz NZ et al. Reduced protein food with L-carnitine maintains lean mass and renal health in senior cats. In Proceedings AAVN Clinical Nutrition & Research Symposium. Virtual, June 10-11, 2020.

Reduced Protein Food with L-carnitine Maintains Lean Mass and Renal Health in Senior Cats

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A study was conducted to determine whether feeding a grain free, reduced protein (29.11% crude protein/20.97% crude fat/4.84% crude fiber, all DMB), complete and balanced food containing added L-carnitine (484 mg/kg DM) maintains lean muscle and renal health in senior cats. The study protocol was approved and followed by an independent facility's Institutional Animal Care and Use Committee (Susquehanna, PA). Nine female and three male clinically normal cats (age, 13.81 + 1.34 years; BCS, 3/5; body weight, 3.67 + 0.85; mean + SD) were transitioned from the standard colony baseline diet (35.28% crude protein/14.67% crude fat/1.62% crude fiber, all DMB; no added L-carnitine) to the reduced protein test food, which was offered to each cat for 6 months (m) at amounts to maintain ideal body condition. Lean body mass (LBM) via DEXA, serum symmetric dimethylarginine (SDMA), whole blood taurine, and clinical hematologic and biochemical values at baseline, 2m, 4m and 6m were analyzed with paired t-tests (Minitab v18). Compared with baseline, mean values over the test feeding period for LBM, SDMA, and blood taurine remained stable ($P>0.05$), and with other mean blood values, were within normal ranges. Mean baseline and 6m values for LBM, serum SDMA, and blood taurine were 3031 vs 3062 g, 16 vs 16 µg/dl, and 610 vs 549 nmol/ml, respectively. These study findings indicate that the reduced-protein test food with a balanced amino acid profile and added L-carnitine promotes maintenance of lean muscle mass and renal health in senior cats.

Frantz NZ et al. Novel food containing antioxidants and fish oil improves mobility scores in arthritic dogs. In Proceedings AAVN Clinical Nutrition & Research Symposium. Virtual, June 10-11, 2020.

Novel Food Containing Antioxidants and Fish Oil Improves Mobility Scores in Arthritic Dogs

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A study was conducted to determine whether a test diet containing higher concentrations of antioxidants and omega-3 fatty acids (Crude Protein 29.0%, Fat 16.5%, Fiber 5.0%, and omega-3 fatty acids, 4.1%, dry matter basis [DMB]) could improve mobility in arthritic dogs. This study protocol was first approved by the facility's (Fergus, Ontario) Institutional Animal Care and Use Committee and followed throughout. Eighteen female and thirteen male dogs (12.13 ± 1.93 years old, 14.21 ± 2.64 kg) exhibiting lameness were radiographed to confirm arthritis in forelimb, hind limb, or both and were randomly assigned the diets. Dogs were offered control food (Crude Protein 23.9%, Fat 14.1%, Fiber 3.3%, DMB, without added omega 3 fatty acids) or test food once daily to maintain body weight for 56 days and evaluated by an veterinary orthopedic surgeon for arthritis (ACVS Canine Orthopedic Index© (0-4 scale from no to extreme arthritis)), as well as urine and serum ELISA analyses for cartilage synthesis/degradation (CTX-II, C1, 2C, C2C, and CP-II) and inflammation marker C-reactive protein at days 0, 28, and 56. Dietary effects were analyzed in Minitab v18 using ANOVA. Dogs fed test food had improved delta arthritis scores (day 56 minus day 0) compared to control (-0.81 vs 0.33, $P < 0.04$). Urine and serum markers were minimally changed; however, serum C-reactive protein was lower ($P<0.05$) in test- versus control-fed animals at day 28, but not day 56. These findings support a role of antioxidants and omega-3 fatty acids in the clinical management of arthritic dogs.

Tefft KM et al. A moderate sodium novel dry diet dissolves naturally occurring struvite cystoliths in cats. In Proceedings AAVN Clinical Nutrition & Research Symposium. Virtual, June 10-11, 2020.

A Moderate-Sodium Novel Dry Diet Dissolves Naturally Occurring Struvite Cystoliths in Cats

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This study was conducted to determine the efficacy of a moderate-sodium, weight management test diet formulated to achieve urinary conditions conducive to dissolution of feline struvite cystoliths. The study protocol was approved by the universities' Institutional Animal Care and Use Committee. Thirteen client-owned adult cats with naturally occurring, suspected struvite cystolithiasis were enrolled in this prospective, open-label, multi-center study, based on radiographic appearance of their uroliths and urinalysis parameters. Cats were fed the test diet exclusively, at amounts calculated to supply maintenance energy requirements, for up to 56 days. Radiographs were obtained every other week until dissolution was evident or the end of the study period was reached. Cats with radiographically apparent uroliths at the end of the study period underwent cystotomy for stone retrieval and analysis. Of the ten cats that completed the study, nine (90%) experienced radiographic dissolution; three (30%) had radiographic dissolution by day 14 of feeding and five (50%) had radiographic dissolution by day 28. One cat with a large urolith burden had incomplete dissolution after 56 days; the owner declined cystotomy and continued to feed the test diet. There was complete radiographic dissolution at day 70. Another cat that had partial radiographic dissolution at day 56 had two calcium oxalate urolith cores removed at cystotomy. These study findings indicate that this moderate-sodium test diet was successful in dissolving suspected struvite cystoliths, most within the first month of feeding, and is clinically useful for managing feline struvite urolithiasis.

Lewis T et al. Evaluation of a new hydrolyzed salmon-based diet in dogs with suspected cutaneous adverse food reaction: a multi-center randomized triple-blinded clinical trial. In Proceedings of the North American Veterinary Dermatology Forum (NAVDF); 2019 April 10-13; Austin, Tx.

Evaluation of a new hydrolyzed salmon-based diet in dogs with suspected cutaneous adverse food reaction: a multi-center randomized triple-blinded clinical trial

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Abstract: Dietary elimination trials and allergen avoidance are mainstays of diagnosis and treatment in dogs with cutaneous adverse food reactions (CAFR). Non-prescription diets may contain undeclared ingredients or contaminants that compromise dietary manipulation. Certain prescription diets have established purity, but some patients still demonstrate sensitivity. Therefore, alternative diets addressing patients' specific requirements are needed. We performed a multi-center, triple-blinded, crossover clinical trial to validate the benefits of a prescription hydrolyzed salmon diet (HSD) with verified purity in dogs with suspected CAFR. We hypothesized that HSD would be equally efficacious and well-tolerated as an established hydrolyzed poultry feather diet (HPFD) for dietary elimination trials. Patients were randomized to receive HSD or HPFD for 8 weeks and then received the other diet for 8 additional weeks. Patients were examined every 4 weeks wherein Canine Atopic Dermatitis Extent and Severity Index (CADESI)-4, owner-scored pruritus visual analog scale (VAS), and adverse events were recorded. Data were compiled from 47 dogs. Only HSD significantly decreased CADESI score (HSD: -7.3 ± 11.6 and HPFD: -3.0 ± 11.1; $P = 0.001$ and $P = 0.090$, respectively), however, the diets did not differ from each other ($P = 0.053$). Both diets lowered VAS scores (HSD: -1.15 ± 2.41 and HPFD: -0.67 ± 2.52; $P < 0.001$) and did not differ from each other ($P = 0.322$). Sixteen dogs had adverse events with HPFD compared to seven dogs with HSD ($P < 0.01$). These results suggest HSD is a valuable option in the diagnosis and treatment of canine CAFR.