

## **Effects of Fresh Prepared, Whole Food Canine Maintenance Diets on Clinically Measurable Blood Parameters in Healthy Dogs.**

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Despite a trend toward novel feeding methods, there is a lack of evidence of quantifiable differences between feeding modalities in veterinary nutrition. This study, described in approved ACUC protocol #12.002, looked at healthy dogs (n=21) fed a freshly prepared, lightly cooked, whole food (WF) diet balanced with nutrient supplementation and formulated to meet NRC 2006 RA guidelines using USDA certified ingredients and information from the USDA standard release database and suppliers. Dogs were aged 1 to 6 years, and included adequate representation of small, medium, and large breeds. All dogs were eating exclusively a standard commercial extruded (EX) kibble diet prior to the study. Physical exam findings, complete blood cell counts, and comprehensive chemistry panels were collected and recorded at t=0 days, t=180 days, and t= 365 days, after introducing WF. Data were analyzed using paired t-tests with each dog serving as the experimental unit (SAS, 2013). Findings included a notable increase in mean circulating globulins (P<0.01 at both t=180 and t=365), a corresponding decrease in mean albumin (P<0.01 at both t=180 and t=365), with no change (P>0.57) in total protein. Mean albumin:globulin ratios shifted from 1.87 at t=0 to 1.11 at t=365 (P<0.01). There was a mean white blood cell increase at t=365 (P<0.01), including an increase in mean granulocytes at t=180 (P<0.02) and t=365 (P<0.01), within the reference range. There was no change (P>0.49) in red blood cell count, however mean hemoglobin increased at t=180 (P<0.03) and mean hematocrit increased at t=180 (P<0.01) and t=365 (P<0.01). There was also an increase in mean creatinine at t=180 and t=365 (P<0.05 and P<0.03), within the reference interval. There were no notable trends observed on alanine aminotransferase, alkaline phosphatase, blood urea nitrogen, or calcium and phosphorus levels (P>0.10). Physical exams, body condition scores, weight measurements, and client history deemed all dogs healthy during the study. These findings show a measurable difference in some blood parameters, including a measure of immune function (A/G ratio), when WF was fed instead of EX to healthy dogs and could provide evidence of the benefits of feeding USDA certified ingredients, supplemented with nutrients and formulated to meet 2006 NRC guidelines, as a WF feeding modality in dogs.