Diamond CARE RX

HEALTHY SOLUTIONS FOR A HAPPIER PET

RENAL FORMULA FOR ADULT DOGS

Key Research Findings and Supporting Studies

Diamond CARE pet foods are designed based on proven research and carefully curated studies. This document is a synopsis of the key findings that guided the formulation of Diamond CARE Rx Renal Formula for Adult Dogs.

Restricted sodium content can have beneficial effects for managing hypertension in patients with chronic kidney disease.

Reduction in protein intake reduces proteinuria and slows progression of chronic kidney disease.[4]

Diets with reduced salt content enhance the antihypertensive effects of antihypertensive agents in dogs and cats.[4]

Restricting protein and phosphorus intake for dogs with chronic renal failure can delay onset of uremic crises and enhance survivability.

Higher protein levels in the diet led to elevations in BUN without concurrent increases in creatinine. Clinical symptoms of uremia include anorexia, vomiting and oral ulcers.[1]

Dogs fed a renal formula dog food with 14% protein and 19% fat had fewer incidences of uremic crisis and delayed mortality compared to dogs fed a maintenance formula dog food containing 25% protein and 12% fat. Calcium, phosphorus, sodium and potassium were restricted in the renal formula as compared to the maintenance formula. The renal formula had an n-6:n-3 of 2:1 compared to 15:1 in the maintenance formula.[9]

Uremic crisis occurred in 65% of dogs in the maintenance formula group compared to 33% of the dogs in the renal formula group.[9]

A median of 188 days elapsed before deaths occurred in the maintenance formula group compared to a median of 594 days before deaths occurred in the renal formula group.[9]

At the end of the study, 65% of the dogs in the maintenance formula group had died from renal causes while 33% of the dogs in the renal formula group had died from renal causes.[9]

In this study, 42.9% of the dogs fed medium-protein diets showed declining renal function while 12.5% of the dogs fed low-protein diets showed declining renal function.[11]

Dogs with chronic renal failure consuming a restricted-protein diet had no mortality associated with uremic complications over a 40-week period compared to 6 of 11 dogs consuming a maintenance diet.[12]

Several researchers (Polzin, Finco and Barsanti) favor a diet with a moderate protein level for management of chronic renal failure (14-18% dry matter protein). This range was found to provide adequate nutrition without aggravating the uremic status of the dogs with chronic renal failure. Renal function appears to remain most stable in groups of dogs fed this level of protein.[13]

Restricted protein and phosphorus intake for dogs with chronic renal failure (CRF) has several clinical benefits, including increased activity levels, weight gain and a healthy hair coat.

Dogs with CRF gained weight when switched from a phosphorus-replete diet containing 31% protein to a phosphorus-restricted diet containing 16% protein.[8]

Diets containing 8.2% protein and 17.2% protein on a dry matter basis were associated with increased physical activity and reduction in serum urea nitrogen concentrations when compared to a diet containing 44.4% protein on a dry matter basis.[10]

Dogs with chronic renal failure consuming a restricted-protein diet were more active and had a better-quality hair coat than dogs consuming a maintenance diet.[12]

Diets with restricted calcium and/or phosphorus can have beneficial effects on survivability and progression of renal disease.

Restriction of dietary phosphorus had significant impact on survival of dogs with experimentally induced renal failure, independent of protein levels in the diet.[6]

Over a two-year period, dogs with experimentally induced kidney failure fed a diet replete with calcium and phosphorus had significant unfavorable alterations in numerous biochemical parameters such as calcium, phosphorus, potassium, sodium, chloride, total CO2, anion gap and parathyroid hormone concentration. Dogs fed the calcium/phosphorus-replete diet also had significant reductions in GFR over the course of the study.[7]

Supplementation with omega-3 fatty acids from fish oil has numerous beneficial effects on dogs with chronic kidney disease.

Supplementation with fish oil is renoprotective through enhanced glomerular filtration rate and decrease of renal interstitial fibrosis.[2]

Supplementation with fish oil enhances creatinine clearance.[2]

Supplementation with fish oil results in diminished glomerular injury.[2]

Supplementation with fish oil in early renal insufficiency led to lower serum cholesterol concentrations and lower urinary prostaglandin E2 and thromboxane A2 excretion.[3]

Dietary supplementation with fish oil lowered glomerular pressure, decreased renal eicosanoid series-2 excretion and provided renoprotection.[3,4]

Diets containing an altered ratio of n-6:n-3 fatty acids of 5:1 led to lowered glomerular capillary pressure, altered urinary excretion of eicosanoids and delayed progression of chronic kidney disease.[4]

Supplementation with menhaden fish oil as a source of n-3 PUFA prevented deterioration of glomerular filtration rate, lessened the magnitude of proteinuria and preserved renal structure.[5]

Diets with restricted protein and phosphorus without n-3 PUFA supplementation fed to dogs with chronic kidney disease showed decreases in GFR and progression to end-stage renal failure.[5]

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