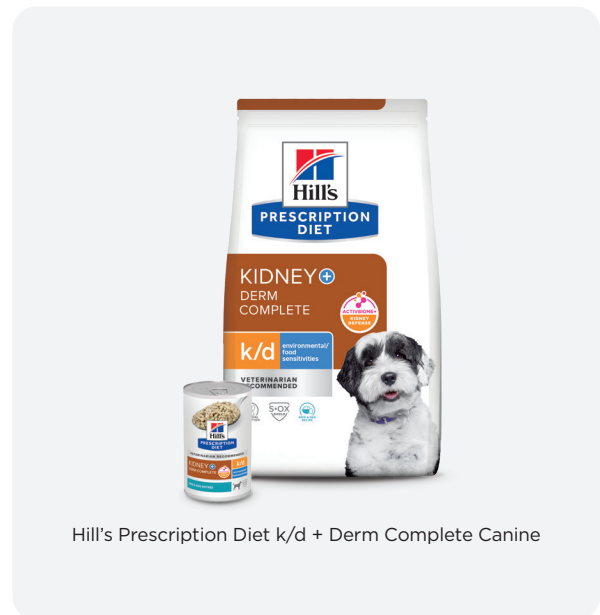




A Unified Approach: Evidence for Prescription Diet k/d + Derm Complete in Managing Chronic Kidney Disease and Allergic Dermatopathies in Dogs

Chronic kidney disease (CKD) is a common diagnosis in clinical practice, affecting an estimated one in ten dogs in the 8- to 10-year-old age group.¹ For these patients, nutritional management is not merely supportive care but a cornerstone of therapy. Consensus guidelines from expert bodies, including the International Renal Interest Society (IRIS), recommend feeding a clinical renal food as a standard of care for dogs across relevant stages of CKD to help manage the disease.^{2,3}

A significant clinical challenge arises, however, in the substantial subset of these patients with comorbidities. Approximately one in seven dogs with CKD also suffers from a concurrent dermatologic or gastrointestinal comorbidity.⁴ This challenge is compounded by the typical life course of these diseases: Allergic dermatopathies most often manifest in younger dogs, typically between six months and three years of age,⁵ while CKD is predominantly a disease of senior patients, with the risk increasing significantly with age.⁶ This reality creates a therapeutic impasse. Adhering to the standard of care for CKD by prescribing renal therapeutic nutrition may compromise dermatologic health if it contains ingredients that trigger the patient's allergy. Conversely, managing the skin with a typical novel or hydrolyzed protein food fails to provide the key nutritional factors — including controlled phosphorus, modified protein levels, supplemental omega-3 fatty acids, antioxidants and buffering agents — that are essential for managing kidney disease according to the scientific evidence. An integrated nutritional solution is needed to resolve this conflict without clinical compromise.



THE EVIDENCE-BASED SOLUTION: A MULTIFACETED NUTRITIONAL APPROACH

Prescription Diet k/d + Derm Complete was developed to resolve the therapeutic impasse by integrating a multifaceted, evidence-based renal therapeutic food with an innovative solution for allergic skin disease.

PROVEN NUTRITION FOR KIDNEY HEALTH, SURVIVAL AND BODY CONDITION

The foundation of k/d + Derm Complete is the therapeutic nutrition of k/d. Its efficacy in managing the most severe outcomes of CKD was established in a **24-month, prospective, randomized, controlled clinical trial**. In that study, dogs with spontaneous CKD fed the nutrition of k/d lived more than three times longer (median survival 594 days) compared to dogs fed a typical adult maintenance food (median survival 188 days).⁷ *Figure 1*. This significant extension in survival was accompanied by a delayed onset of uremic crises, underscoring the profound impact of this therapeutic nutrition.⁷ *Figure 2*.

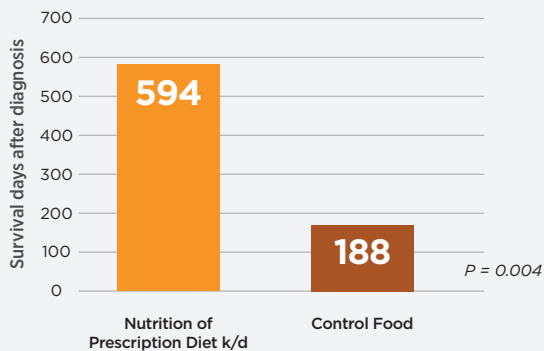


Figure 1. Median number of days until death in dogs eating the renal food (nutrition of k/d) compared with the control food during the study period.

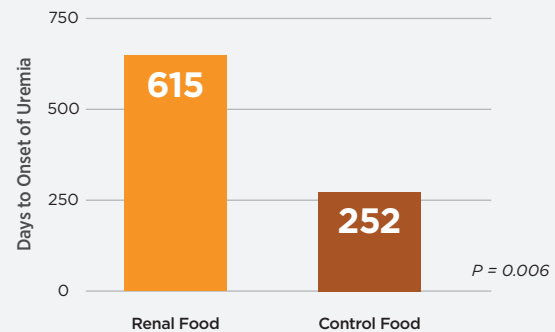


Figure 2. Median number of days until dogs developed uremic crises while eating the renal food (nutrition of k/d) compared with the control food during the study period.

Beyond extending survival, a primary goal of CKD management is to combat age-related sarcopenia and disease-associated cachexia. These serious complications of chronic disease negatively impact patient strength, immune function and quality of life, and are driven by a combination of reduced caloric intake and metabolic alterations.^{8,9} To address this, the nutrition of k/d is formulated to be highly palatable, which was demonstrated in a prospective, 12-month study of client-owned dogs with IRIS Stage 1 CKD that showed a 97% successful transition rate in a real-world setting.¹ This high acceptance is critical for maintaining the consistent caloric intake needed to prevent muscle catabolism. Furthermore, this study provided direct evidence that dogs with early CKD (IRIS Stage 1) fed this therapeutic food maintained a stable Body Condition Score (BCS) over the 12-month period, demonstrating its ability to support body condition in dogs diagnosed with the disease.¹ This is complemented by findings showing that owners of dogs with CKD fed the nutrition of k/d reported significant improvements in their pets' quality of life, specifically in appetite and activity levels, compared to dogs on a control food.¹⁰ Maintaining appetite and activity is crucial for combating muscle wasting. The formulation utilizes high-quality protein with an optimized amino acid profile to provide the building blocks for muscle maintenance, while added omega-3 fatty acids and antioxidants help combat inflammation and oxidative stress.¹¹

TARGETED SUPPORT FOR ALLERGIC SKIN DISEASE: A UNIFIED NUTRITIONAL APPROACH

The diagnosis of allergic skin disease in dogs presents a common clinical conundrum as the clinical signs of atopic dermatitis (environmental allergies) and cutaneous adverse food reactions (CAFR) are often indistinguishable.¹² An elimination diet trial is therefore a critical and mandatory diagnostic step for any dog with non-seasonal pruritus before a definitive diagnosis of atopic dermatitis can be made.⁵ The dermatological component of k/d + Derm Complete, which is the nutrition of Derm Complete, is built on a foundation of rigorous clinical research demonstrating its efficacy in managing the signs of allergic skin disease, regardless of the primary trigger.

EFFICACY IN ADVERSE FOOD REACTIONS (AFR)

The efficacy of this nutrition for dogs with a history of AFR was validated in two separate 42-day, prospective, randomized, controlled, head-to-head clinical trials conducted in the United States and the United Kingdom.^{13,14} In these studies, the nutrition of Derm Complete was compared to a hydrolyzed protein control food, considered a standard of care for managing AFR. The primary goal was to determine if the novel protein food could maintain control of clinical signs as effectively as the hydrolyzed food in dogs with established food allergies. The results from both studies demonstrated that Derm Complete was equally effective at maintaining low scores for veterinarian-assessed skin lesions (Canine Atopic Dermatitis Lesion Index, CADLI). This provides high-level evidence that the novel protein approach of Derm Complete performs as well as a hydrolyzed protein food for maintaining control of the clinical signs of AFR.^{13,14} *Figure 3.*

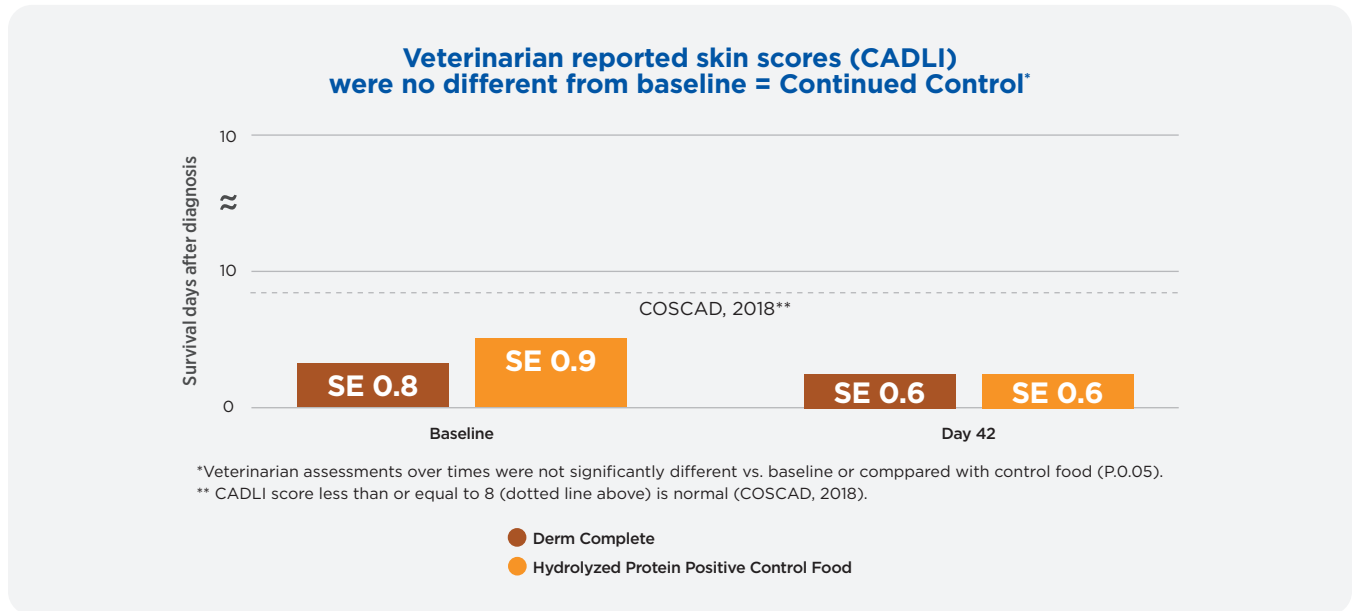


Figure 3.

EFFICACY IN ENVIRONMENTAL ALLERGIES (ATOPIC DERMATITIS)

The food's efficacy for atopic dermatitis was evaluated in a separate **84-day, blind, randomized, controlled clinical trial** in dogs with moderate to severe atopic dermatitis.¹⁵ The study involving 47 client-owned dogs diagnosed with canine atopic dermatitis (CAD) demonstrated significant improvements when feeding Prescription Diet Derm Complete compared to a control food. At the study's conclusion, significantly more owners (82% vs. 60%) whose dogs were fed Derm Complete reported lower (improved) scratching scores on a Pruritus Visual Analog Scale (PVAS). *Figure 4*. This subjective owner assessment was corroborated by objective data from wearable accelerometer monitors, which were used to quantify pruritic behaviors like scratching.

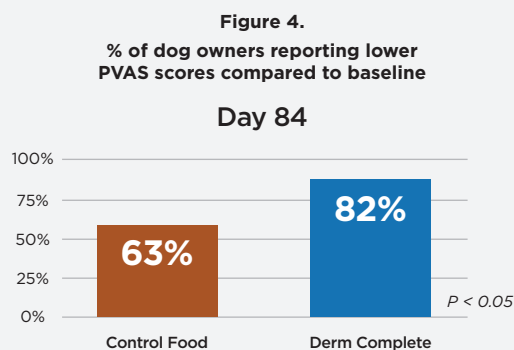


Figure 4. A significantly greater proportion of owners (82% vs. 63%) who fed Derm Complete to their dogs with environmental allergies reported lower scratching scores (PVAS) at the end of the study compared to study start than owners of dogs fed a control food.

These devices recorded significantly fewer scratching bouts in the dogs fed Derm Complete compared to the control group ($P=0.001$). Furthermore, the study found significantly greater owner-reported improvements in the Derm Complete group for dog sleep quality (59% vs. 32% reporting improvement, $P<0.05$) and a significant reduction in the dog's condition interfering with the owner's sleep after two months ($P<0.05$)

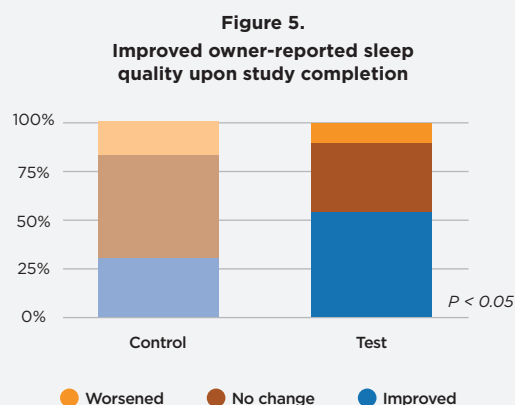


Figure 5. A greater proportion of owners (59% vs. 32%) who fed Derm Complete to their dogs with environmental allergies reported an improved score for the question "my dog sleeps well" at study end compared to study start than owners of dogs fed a control food.

These findings, validated by both subjective owner reports and objective monitoring, demonstrate that Derm Complete can be an effective component of a therapeutic approach for managing CAD.

KEY NUTRITIONAL STRATEGIES: EGG PROTEIN FOR ALLERGIC SKIN DISEASE AND CKD SUPPORT

The choice of a novel protein like egg is a key strategy for both the diagnostic and therapeutic management of allergic skin disease. Because most food allergies are triggered by a small number of common proteins, selecting an uncommon source like egg minimizes the risk of provoking an existing food allergy.^{16,17} The choice of a novel, high-quality protein is also a crucial strategy for supporting the comorbid CKD patient. Recent evidence has shown that undigested protein reaching the colon is fermented by proteolytic bacteria, leading to the production of the same gut-derived uremic toxins that drive CKD progression.¹⁸ A crucial nutritional goal, therefore, is to maximize protein digestion and absorption in the small intestine, thereby limiting the substrate available for toxin production in the colon. Egg is an excellent choice from an immunological, nutritional and renal-supportive standpoint. It is not only an uncommon allergen in the canine population,¹⁷ but it is also a protein of exceptionally high quality and digestibility,¹⁹ ensuring the patient receives the optimal building blocks to support lean body mass while simultaneously helping to manage the gut-kidney axis by minimizing the substrate for uremic toxin production. The food is also formulated with a proprietary blend of bioactives and phytonutrients to help manage the inflammatory response and support skin barrier health.²⁰

ADVANCED RENAL SUPPORT VIA THE GUT-KIDNEY AXIS

Beyond the established benefits of the core renal nutrition, Prescription Diet k/d + Derm Complete incorporates the **ActivBiome+ Kidney Defense prebiotic blend and betaine**, specifically designed to target the gut-kidney axis, representing a more advanced, holistic approach to managing CKD. Emerging research has established that CKD significantly alters the gut microbiome, leading to dysbiosis — an imbalance favoring proteolytic bacteria.²¹ These bacteria ferment undigested protein and amino acids that reach the colon, producing harmful uremic toxins such as indoxyl sulfate (IS) and p-cresyl sulfate (PCS).¹⁸ These toxins are absorbed into the systemic circulation, where elevated levels have been documented in dogs with naturally occurring kidney disease.²² Crucially, these gut-derived toxins are not passive bystanders; they actively contribute to the progression of CKD by promoting systemic inflammation, oxidative stress and renal fibrosis.^{23,24} Targeting the gut microbiome is therefore a rational therapeutic strategy for managing CKD.

The **proprietary blend of prebiotics and betaine in ActivBiome+ Kidney Defense** has been shown to beneficially modulate this axis. A clinical study conducted specifically in dogs with **early-stage CKD (IRIS Stages 1 & 2)** evaluated the effect of a food supplemented with this prebiotic blend and betaine.²⁴ The results demonstrated a tangible impact on the gut-kidney axis: Dogs consuming the supplemented food showed several favorable changes, including **significant decreases in multiple uremic toxins** (including indole-3-acetic acid, a precursor related to indoxyl sulfate) and other metabolites associated with inflammation.²⁴ This provides direct clinical evidence that the ActivBiome+ Kidney Defense prebiotic blend and betaine actively targets the dysbiotic gut environment in dogs with CKD, helping to reduce the production of harmful waste products. *Figure 6.*

Figure 6.

Hill's ActivBiome+ Kidney Defense is a proprietary blend of betaine and prebiotics shown to activate the gut microbiome to help protect kidney function.		
Ingredient	Site of Action	Description/Function
Betaine	Kidney	A nutrient that functions as an osmolyte to support cell hydration and has antioxidant & anti-inflammatory properties
Short-chain fructooligosaccharides (scFOS)	Proximal colon	Soluble, simple fiber that modulates the microbiome (proximal colon) and helps reduce uremic toxins produced by gut bacteria
Oat beta glucan	Distal colon	Soluble, complex fiber that modulates the microbiome (distal colon) and helps reduce uremic toxins produced by gut bacteria

The practical impact for patient management is significant. While traditional renal care relies on carefully controlled nutrient profiles to manage the disease, Prescription Diet k/d + Derm Complete enhances this approach by also incorporating a targeted prebiotic blend and betaine. This allows it to proactively manage the gut-derived factors that contribute to CKD progression. This represents a more comprehensive approach to renal care, aiming to reduce the systemic burden of uremic toxins and inflammation originating from the gut, thereby supporting overall patient well-being and potentially helping to slow the advancement of kidney disease.

CLINICAL APPLICATION: A UNIFYING SOLUTION FOR CONCURRENT DISEASE

The evidence culminates in a compelling nutritional strategy that eliminates the therapeutic compromise for dogs suffering from CKD with concurrent allergic skin disease. By integrating the proven renal benefits of the nutrition of k/d, the targeted dermatological support of Derm Complete, and the advanced gut-kidney axis modulation of the ActivBiome+ Kidney Defense prebiotic blend and betaine, this single therapeutic food provides a clear, evidence-based protocol for managing these challenging comorbid cases.

The clinical application is direct and impactful. For the senior dog with newly diagnosed CKD that has a long history of atopic dermatitis, veterinarians no longer need to compromise between renal and dermatologic health. For the itchy dog undergoing an elimination diet trial that reveals concurrent renal abnormalities on routine bloodwork, this food allows for a seamless and immediate implementation of renal care without disrupting the diagnostic plan or requiring another food change.

It is critical to note that this integrated approach cannot be replicated by simply mixing two separate therapeutic foods. Doing so would compromise the therapeutic integrity of both. Mixing Prescription Diet k/d with another food would dilute its precisely controlled levels of phosphorus and protein, negating its proven benefits for renal health. Simultaneously, adding a non-novel protein food like a standard k/d formulation to Prescription Diet Derm Complete would negate the novel protein strategy, potentially triggering an adverse reaction in a food-sensitive patient. Prescription Diet k/d + Derm Complete is uniquely formulated to provide the full, uncompromised and evidence-based therapeutic benefits for both conditions in a single, cohesive food.

Prescription Diet k/d + Derm Complete allows the practitioner to confidently provide comprehensive, evidence-based nutritional care that simultaneously addresses both conditions supporting a better quality of life for the patient.

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