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Study Shows Benefits of an Amino Acid-Based Diet in Diagnosis of Cutaneous Adverse Food Reaction in Dogs

Q You recently led a study¹ to evaluate the efficacy of an amino acid-based elemental diet for dogs with cutaneous adverse food reaction (CAFR). Can you describe the study and its purpose?

A CAFR impacts a significant number of canine patients. A recent survey showed that nearly 40% of dogs visiting participating veterinary clinics were seen because of a dermatologic and/or gastrointestinal issue.² Our primary objective was to demonstrate that Purina® Pro Plan® Veterinary Diets EL Elemental could be an effective tool for diagnosing and managing dogs with CAFR. We also assessed how the diet affected GI clinical signs.

A total of 45 client-owned dogs at five different dermatology specialty practices completed this prospective, uncontrolled, observational elimination diet trial study. The dogs were non-seasonally pruritic, on consistent parasite control and had never been on a therapeutic diet trial before. Participants also had to fit into one of three categories: (1) pruritic despite the use of antipruritic medications; (2) pruritic despite the resolution of bacterial or yeast skin infections; or (3) pruritic despite having no evidence of skin infection. Although our protocol didn't allow long-acting steroid injections, patients could be administered oclacitinib, antihistamines and oral glucocorticoids to manage pruritis. However, these medications had to be withdrawn two weeks prior to the end of the diet trial to avoid compromising the food challenge.

Clients agreed to have their dogs complete six- to eight-week therapeutic diet trials and, at the end of the trials, challenge the patients with their original diets. The challenge period included feeding back the diet fed prior to the diet trial and increasing volumes over 14 days. Dogs were diagnosed with food allergy if they flared on challenge and improved when restarting the test diet, EL Elemental. Itching was assessed with a canine Pruritis Visual Analog Scale (PVAS), lesions were assessed with the Canine Atopic Dermatitis Extent and Severity Index-4 (CADESI-4), and GI signs were evaluated with a client questionnaire—each at multiple time points.

Q What key findings can practitioners take away from this study?

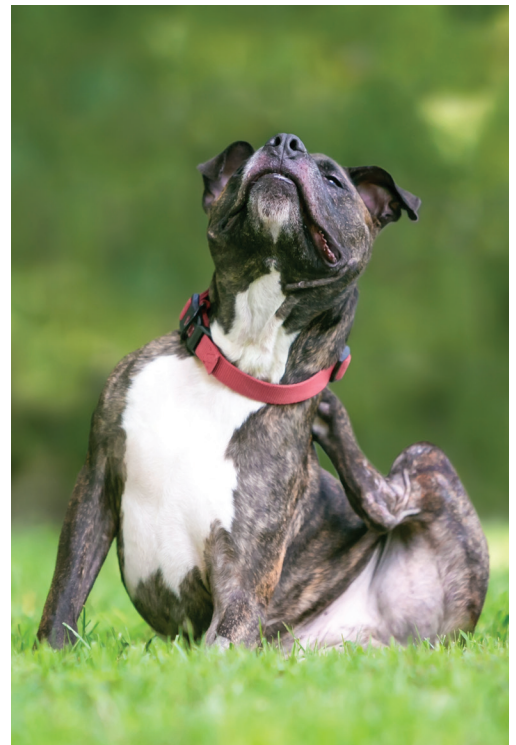
A Eighteen of the study dogs (40%) were diagnosed with CAFR. The other 27 dogs (60%) were considered non-responsive to the diet without CAFR. In addition:

- Patients with GI symptoms improved in both groups.

- The patients who did have CAFR flared upon diet challenge within 14 days.
- The smallest volume of the previous diet that induced a CAFR flare was a single teaspoon.

This is the first study to show that EL Elemental is efficacious for the diagnosis of canine CAFR. My hope is that this tool will make diagnosing adverse food reactions much easier. An amino acid-based diet such as EL Elemental is unique compared with traditional elimination diets in that **none** of the amino acids it contains are derived from an intact protein. Amino acid-based diets are an emerging area of research and I think we'll see more studies with them in the future.

For me, EL Elemental is a great go-to diet for a diet trial and may be an especially good choice for patients suspected of having food allergy with concurrent cutaneous and GI symptoms.



Each year, dermatologic and GI issues lead to a substantial number of canine veterinary visits.

¹ Tinsley J, Griffin C, Sheinberg G, et al. An open-label clinical trial to evaluate the efficacy of an elemental diet for the diagnosis of adverse food reactions in dogs. *Vet Dermatol.* 2023;00:1–10.

² *Veterinary Landscape Study, 2020.*



Feed That Itch!

The Role of Diet in Managing Dogs with Atopic Dermatitis



Emily Cross, DVM, DABVP (canine/feline practice)
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 Purina Institute

Itchy dogs afflicted by environmental allergies are a fact of life in veterinary practices, with the condition affecting an estimated 3% to 15% of canine patients.¹ The severity of canine environmental allergies varies significantly, from dogs that experience mild and seasonal dermatitis to those suffering severe, year-round clinical signs. Regardless of degree, nutrition can and should be an important pillar of patient management for dogs with atopic dermatitis.

What's in a "derm" diet?

The degree of disease severity may dictate what multimodal therapeutic approach is taken to manage patients with atopic dermatitis. This can include a therapeutic diet, anti-pruritic medications, topical therapy and/or immunotherapy. When assessing dermatologic diet options, veterinarians should look for the following nutrient modifications:

- **Omega-3 fatty acids.** Polyunsaturated fatty acids can help nutritionally manage dogs with inflammation associated with pruritis. Veterinarians should take care to ensure the dermatologic diet they recommend provides omega-3 fatty acids derived from fish oil, which is rich in EPA and DHA. Dogs (and cats) cannot efficiently convert the shorter-chain omega-3 fatty acid ALA found in flaxseed oil into beneficial EPA and DHA. In situations where it isn't possible to feed a fish oil-based diet, supplementation with fish oil capsules can be considered; however, the number of capsules required daily—particularly for larger dogs—can make administration challenging for some owners.
- **Omega-6 fatty acids.** It is believed that dogs with atopic dermatitis have defects in the skin barrier. For this reason, omega-6 fatty acids—which are supplied through vegetable oils and can help maintain and protect the

skin barrier—are a cornerstone of nutritional therapy.

- **Antioxidants.** Vitamins A and E support a healthy immune system. Including a high level of Vitamin E helps reduce oxidative stress. Zinc, which can function as an antioxidant, also helps maintain and protect the skin barrier.
- **Protein.** Protein turnover is also important in skin repair and hair growth, so ensuring the dog's diet contains adequate amounts of high-quality protein is essential.

Educate clients to recognize, measure success

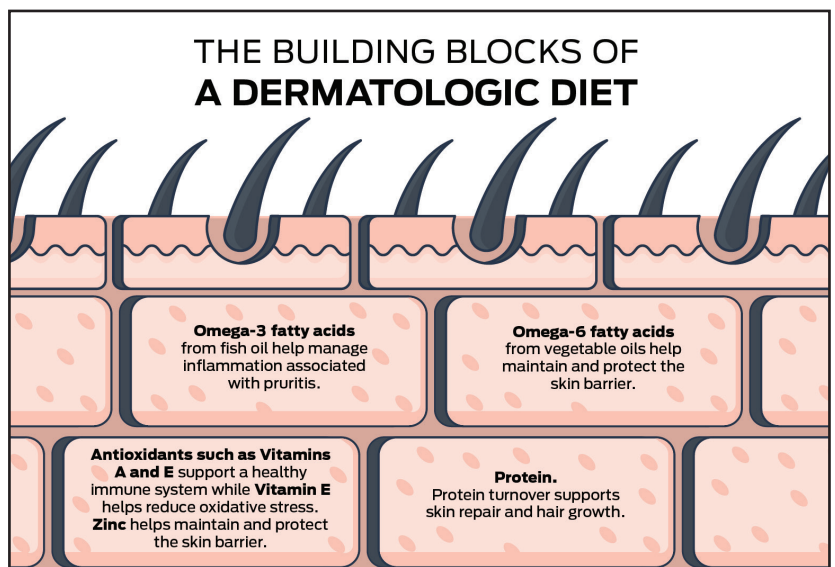
Setting appropriate goals and expectations for clients is critical in atopic dermatitis cases. Improvement doesn't occur overnight—nor should total elimination of clinical signs be expected. I always stress to clients that success with any therapeutic intervention should be measured as 50% improvement in pruritic behaviors. I advise clients to look for signs that their pet has become more "comfortably itchy" (dogs may still lick their paws or scratch but the frequency is reduced and they are no longer traumatizing their skin and/or developing secondary infections). I also teach owners to use the Pruritis Visual Analog Scale (Canine), or PVAS,

to assess and monitor their pets' improvement. Putting a number on the signs they see makes it easier for them to recognize progress.

Finally, owners should understand that improvement will take time. I typically recheck a patient at the four- to eight-week mark. When an antipruritic medication is needed, it should work quickly; however, dietary intervention will still require four to eight weeks to begin making a difference. In more severe cases, my goal may be to initially improve the dog's quality of life with fast-acting medications, then gradually reduce the drug dosage or even phase it out completely; once secondary infections have been addressed, it may be possible for topical therapies and nutritional management to manage the patient's clinical signs to a point that daily medication is not required.

Diet is sometimes overlooked as an important component of managing dogs with atopic dermatitis. Given all the benefits of nutritional management, as well as its safety, veterinarians should be strongly encouraged to include dietary recommendations for these patients.

¹ Hillier A, Griffin CE. The ACVD task force on canine atopic dermatitis (I): incidence and prevalence. *Vet Immunol Immunopathol.* 2001;81(3-4):147-51.



Diet Trial Success Hinges on Client Buy-In



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The process of conducting an elimination diet trial to diagnose canine food allergy can be challenging. However, the concept of a diet trial isn't really that complicated: It requires feeding a veterinarian-recommended diet in a way that's acceptable and achievable for both client and patient. The success of a diet trial hinges on clients understanding *why* we want them to go through this process and *how* it can aid in bringing their pets relief.

Here's how I navigate diet trials and how my staff and I work with clients to help carry them out successfully.

1. Take an accurate and thorough history.

Getting a detailed dermatologic history is the first step to getting on the right diagnostic path. Although we have a set of core questions for clients (e.g., age of allergic onset, disease progression, body sites affected, pruritus score, diet history, response to past treatments, if gastrointestinal [GI] signs are present, flea preventative status, travel or relocation history), we tailor our questions to the responses we receive (adaptive history taking).

2. Select an appropriate diet.

The four categories of diets I consider for an elimination diet trial are **commercial therapeutic novel protein,**

hydrolyzed, amino acid-based/elemental and home-prepared novel protein. I choose a diet based on client feedback, diet history and potential issues I see with patient acceptance. I get a sense of whether clients will accept a commercial diet or if they want to home-prepare something for their dog. I do avoid using home-prepared diets for patients with challenging nutrient requirements, such as growing puppies.

Over the years, I have come to realize the importance of client

compliance and ensuring that patients will accept the chosen elimination diet. If this is not the case, the diet trial cannot be successful.

Purina® Pro Plan® Veterinary Diets EL Elemental, an amino acid-based diet, can be a great diet trial option. It's palatable, it's a viable choice for a dog who has a history of eating many different types of proteins or is a picky eater, and it has limited fat to aid digestion for dogs with compromised GI tracts. This diet is also something I

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Owner buy-in is a critical component in conducting a successful elimination diet trial to diagnose food allergy.



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reach for when I'm trying to convince a client to perform a second elimination diet trial. I can assure those clients that EL Elemental is formulated differently than the novel protein or hydrolyzed diets their dog has previously tried.

3. Anticipate obstacles.

Multi-pet households, inappropriate treats and flavored medications can all compromise the diet trial process. In our practice, we review the potential diet trial pitfalls faced in different homes and how clients can try to avoid them. Being able to give treats is important to many clients. Though I do allow certain treats, I also inform clients that treats add a variable to the diet trial that must be considered when evaluating results. I also set appropriate expectations for how long it can take to achieve a diagnosis, as elimination diet trials often take weeks to months to complete.

4. Clarify the why.

If a client doesn't fully understand why we're doing the diet trial, we're certain to have slip-ups. If they know why we're doing it and what to expect during and after the process, the chances of success increase. Be sure clients have:

- Written tools that are easy to reference.
- Contact information for an appropriate clinic staff member.
- A recheck visit or phone call/email update halfway through the trial to check in and see how things are going.

This support will help ensure that clients understand what they need to do and the rules of the diet trial—all with the goal of achieving successful diagnosis and management of dogs with food allergy.



Key Takeaways

- An elimination diet trial study demonstrated that Purina® Pro Plan® Veterinary Diets EL Elemental is efficacious for the diagnosis of cutaneous adverse food reaction (CAFR) in dogs.
- Nutrition is an important pillar of patient management in cases of canine atopic dermatitis, whether clinical signs are mild, moderate or severe.
- Taking a thorough dermatologic and diet history is the first step toward accurately diagnosing canine food allergy. Ensuring clients understand and buy into the diet trial process is critical to achieving successful allergy diagnosis and management.

A large advertisement for Purina Pro Plan Veterinary Diets EL Elemental. It features a close-up of a Yorkshire Terrier's face on the right side. On the left, the Purina Pro Plan Veterinary Diets logo is displayed above the headline "REVOLUTIONIZING THE ELIMINATION DIET. AGAIN." Below the headline, a green text block reads: "We started with the first truly hypoallergenic dry diet for dogs with food allergies. And now, our progressive science has led to Elemental—built with purified amino acids. It's our most advanced elimination diet yet." At the bottom, there is a call to action: "EXPLORE OUR ALLERGY-FOCUSED NUTRITION AT PURINAPROPLANVETS.COM/ELEMENTAL". Below the call to action, a row of product bags is shown, including EL Elemental and HA Hydrolyzed. The Purina logo and tagline "Your Pet, Our Passion." are at the very bottom.

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VETERINARY DIETS

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