

# Digest

**VOLUME 5**  
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MANAGEMENT OF  
ALLERGIC SKIN DISEASE

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**Food Trials in Dogs:  
Updates and Communication Tips**

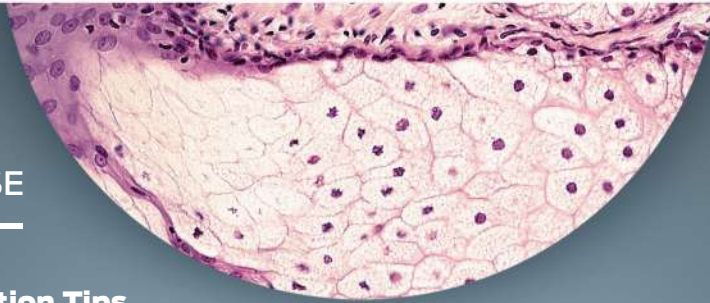
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**Unique Characteristics of  
Food-Responsive Disease  
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# Food trials in dogs: Updates and communication tips

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A diagnostic food trial is commonly used when managing canine patients with dermatological or gastrointestinal problems (**Box 1**). This article will focus on diet trials for cutaneous adverse food reactions (CAFRs). Patients with CAFRs can manifest in various ways, and a thorough clinical history should always include all aspects of the patient's health. For example, when a patient is presented with skin disease, the clinician should always include gastrointestinal-associated questions; otherwise, important clues with diagnostic value can be missed.

## 1. Identify patients that will benefit from a diet trial

The first step is to identify good candidates for a diet trial. Canine CAFRs manifest primarily with non-seasonal pruritus, otitis, and secondary infections: bacterial pyoderma and *Malassezia*. Some patients will also present with gastrointestinal problems such as chronic or recurrent diarrhea, flatulence, vomiting, poor fecal consistency, increased number of bowel movements, and eating grass. Dogs can start presenting with symptoms very young, often before one year old, but older dogs may also develop the condition.<sup>1,2</sup>

Pet owners will seek help at different moments, sometimes when secondary infections have developed or when the problem has become more prominent; this is why a good clinical history is so important. Clinicians must keep in mind that symptoms of CAFRs and environmental allergies are clinically indistinguishable.

## 2. Understand the need for a diet trial and communicate this need to your client

Food trials are still considered the gold standard for the diagnosis of CAFRs. Although there is a myriad of available tests on the market, based on available studies, none have been proven to be consistent and sensitive enough to use for clinical diagnosis and these tests should not be used.<sup>3</sup>

If a food trial is to be successful, client education, communication, and follow-up in the form of messages, calls, and visits are all essential components. Pet owners should be well informed on why a diet trial is needed,

## Of Note

- Food trials are an essential tool for the diagnosis of adverse food reactions.
- Choosing the correct diet is an individualized process for each patient.
- Communication with clients will directly impact the success of the trial.
- A food challenge is necessary to complete the diagnostic process.

what it consists of, and the length of the process; and they should be involved in diet selection. Having a motivated and well-informed client will make all the difference in correctly implementing and harnessing this process's diagnostic value. Do not proceed when a client is unable to do the trial and, in those cases, proceed with symptomatic control or environmental diagnosis.

A critical limitation for many veterinarians is time. Having practical tools to inform and educate owners can be very helpful; providing written information, short videos, and links can expedite the process. This information can be reviewed at home and as many times as needed. See [www.purinainstitute.com/CentreSquare](http://www.purinainstitute.com/CentreSquare) for resources.

## 3. Choosing the right diet for your patient

Diet selection can also be a sensitive point for many owners; veterinarians should work with them to gather sufficient feeding history and preferences to recommend the right diet choice; acceptance by the owner and the pet is essential.

A hydrolyzed or amino acid-based diet is the best commercial diet choice, reducing the chance of using a protein that has previously been fed. Commercial veterinary therapeutic novel protein diets can be considered, but choosing the correct "novel" protein

can be difficult. Limited client recollection of previous diets and the possibility of allergen cross-reactivity, undeclared ingredients, and ingredient quality issues are important considerations, especially with well-pet diets.<sup>4,5</sup> Home-prepared diets are also an alternative for some owners. A veterinary nutritionist should be consulted when using a home-prepared diet, as these are not complete and balanced unless adequately formulated.

#### 4. Diet trial duration, symptom, and infection control

Regarding the length of the diet trial, most dogs with CAFRs will respond to the diet by 8 weeks. New studies suggest an alternative to make the process easier and increase compliance is prednisone or oclacitinib at the beginning of the dietary elimination trial.<sup>6</sup> Depending on the patient's needs and response, these medications are stopped 2–4 weeks into the diet trial to evaluate if pruritus returns. In the case that it does not, a diet challenge can be performed as early as 4 weeks. Careful communication and follow-up are necessary in all diet trials but critical when deciding to challenge and understanding what to do if pruritus returns.

Finally, treating and resolving any secondary infections (skin and ears) and using appropriate flea prevention in all patients undergoing a dietary trial for CAFRs are critical. If these are not addressed, those patients can continue with pruritic behavior, complicating the possibility of a potential food-responsive solution.

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#### Box 1. Food trial checklist

- ❑ Determine the need and benefit of a food trial.
  - ❑ Obtain a comprehensive diet history and select an appropriate diet based on patient and owner factors.
  - ❑ Control pruritus with oclacitinib or prednisone when needed.
  - ❑ Always treat secondary infections and control fleas.
  - ❑ Stay in contact with the owner to answer questions or troubleshoot issues with the trial.
  - ❑ At weeks 4–8, provide instructions for diet challenge if pruritus has resolved off medication.
  - ❑ Challenge with individual ingredients or the previous diet.
    - If the patient's clinical signs return, return to the diagnostic diet, and manage the recurrence of signs. Ideally, the patient will improve again, confirming the diagnosis of CAFRs.
    - If there is no change after the challenge, continue multimodal management and consider an environmental allergy diagnosis and treatment.
  - ❑ A second or even third diet trial with a different diet may be needed if CAFRs are highly suspected and there is no resolution at 4–8 weeks.
  - ❑ If CAFRs are confirmed, manage the patient long-term with a complete and balanced hydrolyzed protein, amino acid-based, veterinary therapeutic novel protein, or home-cooked diet based on the individual needs and owner's preferences.
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# Unique characteristics of food-responsive disease in cats

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## Of all the allergies we see in cats, food allergy may be the most difficult

It cannot be easily differentiated from other causes of allergy, and we lack a diagnostic test. Furthermore, because true allergy can be difficult to differentiate from nonimmunologic food reactions, the tendency has been to use the term “adverse food reactions.” True food allergy exists, but not all cats produce IgE in response to food allergens; a cell-mediated response may be the mechanism. For this reason, a food trial followed by challenge, rather than a serum test, remains the best way to diagnose food allergy.<sup>1</sup>

## Cats with food allergy can present with four cutaneous reaction patterns

- Overgrooming
- Miliary dermatitis
- Eosinophilic dermatitis (eosinophilic granuloma complex)
- Head and neck pruritus

Other signs associated with food-responsive disease in cats include gastrointestinal and respiratory diseases.

## When should we do a food trial?

A food trial should be a consideration when cats have nonseasonal signs. Many cats with nonseasonal disease may also be allergic to environmental allergens, but food allergens can be eliminated, reducing the need for medication to control clinical signs.

## How long should we feed the test diet during a food trial?

Eighty percent of cats with food allergy will have a response in 6 weeks; over 90% will respond in 8 weeks.<sup>2</sup> Glucocorticoids can be used during the first 6 weeks of the trial (**Figure 1**) to help control clinical signs and improve compliance, but owners should be advised to monitor for side effects. The true diagnosis is made by challenging with the old diet. For cats with food allergy, a flare should be seen within 1 week.<sup>3</sup> Some cat owners may be reluctant to challenge once they see relief. Because the diets we use are complete

## Of Note

- An 8+ week-long food trial followed by challenge remains the diagnostic test of choice for food allergy. Serum allergy tests for food allergens identify foods to which cats produce increased levels of IgE, but do not prove clinical relevance and are not accurate for selecting dietary protein sources.
- Hydrolyzed protein diets are preferred for food trials. Controlling itch with glucocorticoids for the first 6 weeks of the trial can help improve compliance.
- Diet trials in outdoor cats are unlikely to be successful. Look at controlling environmental allergies and using medication to control signs. Other challenges with food trials specific to cats include feeding management in multi-cat households.

and balanced, the owner may choose to continue the test diet indefinitely.

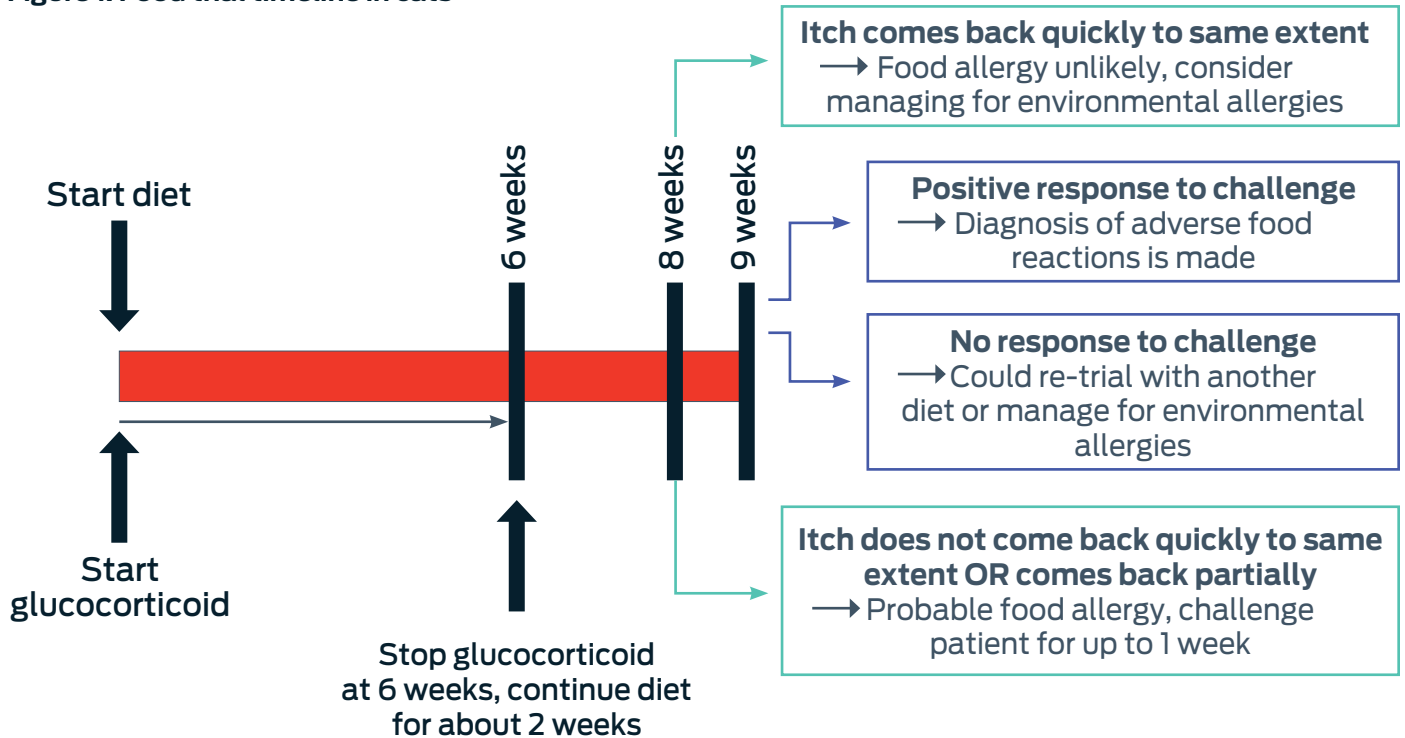
## Which diet should we pick?

Hydrolyzed protein diets are preferred for food trials. Novel protein diets have fallen out of favor due to the potential for cross-reactivity among protein sources. If palatability is an issue in an individual cat, a novel protein may have to be selected to gain diet acceptance. If pet owners choose to home-cook a diet, consultation with a veterinary nutritionist is important to ensure the diet is complete and balanced.

## What foods cause reactions in cats?

The three most commonly reported food allergens for cats were beef, chicken, and fish.<sup>4</sup> Feeding practices have changed, though, since the original studies were published. Cats become allergic to what they eat

Figure 1. Food trial timeline in cats



regularly; obtaining a diet history, including current and previous diets, therefore, is essential.

### What problems are associated with cats and food trials?

Outdoor cats will find ways to supplement their diets. Unless the owner can have the cat live indoors for the duration of the trial, there is little value in doing one. Multiple-cat households also are challenging. Unless the owner can feed the suspected food-allergic cat separately, they will need to feed all the cats the test diet during the trial. Even if they can feed the affected cat separately, the other cats' food cannot be left down. Changing eating habits from free choice can be stressful for the whole household. Similar to dogs, treat, supplement, and flavored medication administration during the trial needs to be addressed with the pet owner.

### What about immunotherapy for food allergies?

Sublingual immunotherapy with foods has been studied in a small number of dogs,<sup>5</sup> but it is not commonly practiced in dogs or cats and is not available through the allergy laboratories used for serum IgE testing.

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# Important nutritional considerations for atopic dermatitis

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## Canine atopic dermatitis

According to the new definition of canine atopic dermatitis by the International Committee on Allergic Diseases of Animals, “canine atopic dermatitis is a hereditary, generally pruritic, and predominantly T-cell driven inflammatory skin disease involving interplay between skin barrier abnormalities, allergen sensitization, and microbial dysbiosis.”<sup>1</sup> This new definition incorporates the alteration of the cutaneous microbiome (dysbiosis) as well as skin barrier abnormalities as integral components of the disease. Atopic dermatitis is a very frustrating skin disease characterized by recurrent flares and the need for long-term use of topical and systemic medications.

The lack of complete resolution and the need of constant medications to manage the clinical signs has been associated with financial and psychological fatigue by the owners. For these reasons an early and appropriate diagnosis and an optimal, multifaceted approach, including diet as well as topical and systemic medications, are essential for the effective management of this disease.

## Diets, nutrients, and canine atopic dermatitis

In the past decades, the use of diets specifically designed to improve the quality of the skin barrier and reduce clinical signs associated with atopic dermatitis has significantly increased. Diets have become an integral component of the therapeutic plan for allergic dogs with the ultimate goal to reduce the need for anti-inflammatory/antipruritic medications potentially associated with high cost and/or side effects. Common nutrients in such diets, associated with beneficial effects on canine atopic dermatitis, include essential fatty acids (specifically eicosapentaenoic acid [EPA] and docosahexaenoic acid [DHA], as well as linoleic acid [LA], alpha linolenic acid [ALA], and gamma linolenic acid [GLA]), vitamin A, vitamin B (niacin and pantothenic acid in particular), vitamin E, as well as zinc (**Table 1**).<sup>2</sup>

Vitamins and minerals are essential for the integrity of the skin barrier by regulating the production of sebum

## Of Note

- Canine atopic dermatitis is characterized by skin barrier deficiency and microbial dysbiosis.
- Diets enriched with essential fatty acids, vitamins, and micronutrients have an important role in decreasing clinical signs, while helping restore the cutaneous barrier and decrease intestinal dysbiosis.
- Skin-specific therapeutic diets are a useful tool in the management of canine atopic dermatitis and may help reduce the long-term use of medications.

and the epidermal differentiation and cornification process. Essential fatty acids have been considered specifically for their anti-inflammatory properties. Diets have been seen as a consistently higher and more reliable source of essential fatty acids than oral supplementations.<sup>3</sup> Over the years, several studies have been published on the benefits of specific diets for the management of canine atopic dermatitis with most of these diets being rich in essential fatty acids and other nutrients.<sup>4-8</sup>

## Diets, nutrients, and microbiome in canine atopic dermatitis

Atopic dermatitis is a systemic disease often associated with intestinal and cutaneous dysbiosis. The relevance of microbial dysbiosis in the pathogenesis of canine atopic dermatitis is still unclear. However, the detrimental impact of dysbiosis on immune tolerance and exacerbation of atopic symptoms is very clear.<sup>9</sup> Based on these observations, two studies focused their attention on the effects of hydrolyzed protein diets, with or without nutraceuticals, on the intestinal dysbiosis occurring in atopic dogs.<sup>7,8</sup> The authors reported not only a significant improvement on the clinical signs of

**Table 1. Common nutrients, and their skin-associated benefits, present in skin specific diets used in the management of canine atopic dermatitis.**

Nutrients	Benefits
Omega-3 fatty acids (EPA and DHA)	Anti-inflammatory activity
Omega-6 fatty acids (GLA)	Anti-inflammatory activity (anti-leukotrienes activity)
Omega-6 fatty acids (LA)	Anti-seborrheic, substrate for sebum, & improves coat quality
Vitamin A	Regulates epidermal differentiation & sebum production
Vitamin B complex	Reduces transepidermal water loss & restores skin barrier integrity
Zinc	Regulates epidermal differentiation
Curcumin	Reduces transepidermal water loss and acts as an antioxidant

atopic dermatitis, but also signs of positive changes in the dogs’ intestinal microbiome, such as improved fecal score, decreased dysbiosis index, and increased fecal bacteria that produce beneficial short-chain fatty acids and changes in metabolic pathways.<sup>6,7</sup>

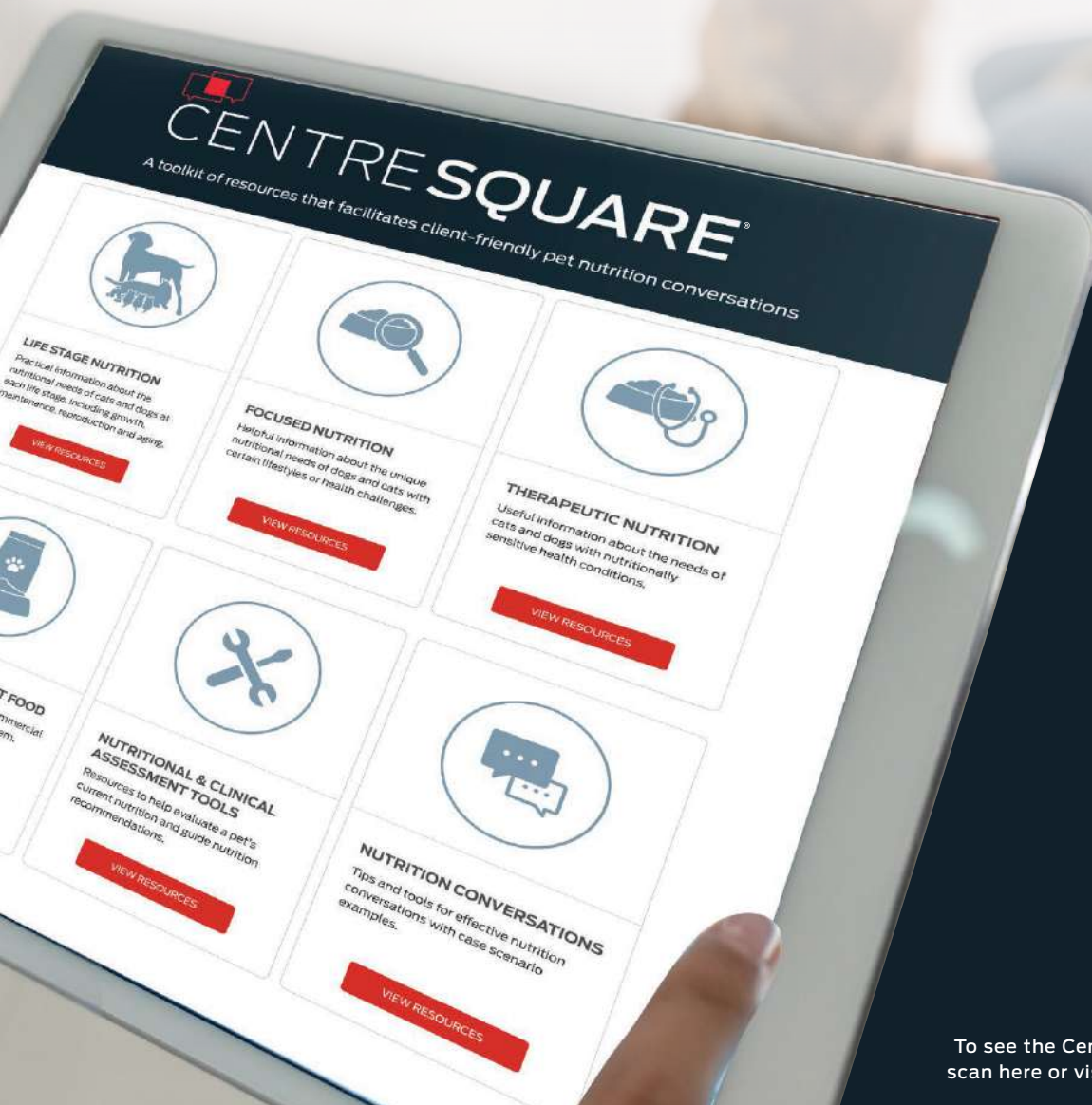
**Summary**

Skin specific diets have been looked at with more interest by the dermatology community for their usefulness in managing the clinical signs and intestinal dysbiosis present in atopic dogs. Such beneficial effects are not only due to their high content in essential fatty acids, but also in micronutrients and vitamins capable of restoring the integrity of the skin barrier. The beneficial effects of these diets may provide an important synergistic effect with the current, most commonly used therapeutics for atopic dermatitis. Therefore, it is important to consider a diet component in the management of canine atopic dermatitis. For cases with food allergy and atopic dermatitis, nutrition may also play a further role in the management of clinical signs.

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