

# The role of diet in the management of canine atopic dermatitis

## The ins and outs of conducting an elimination diet trial

Helen Orbell  
Referral Animal Skin Hospital

Diet has a very important role in the successful management of canine atopic dermatitis (AD), particularly for dogs with food-induced AD (FIAD) / cutaneous adverse food reaction (CAFR) but also for dogs with environmental atopic dermatitis. Successful management of AD requires a multi-modal approach addressing pruritus, inflammation, microbial dysbiosis and skin barrier dysfunction. Diet and nutrition can have an important role both directly and indirectly in the management of these factors.

One of the most obvious ways that diet has a role in the management of AD is for individuals with a CAFR. Environmental atopic and CAFR dogs cannot be differentiated based on clinical presentation and we now consider CAFR to be part of the atopic dermatitis pathogenesis where food is a flare factor. There are currently no allergy tests that have any value in the diagnosis of food allergy, including serum, saliva and hair tests. An elimination diet trial followed by provocative food challenge tests is currently the only reliable method for diagnosing a CAFR. The previously held observation that an 'ears and rears' pruritic pattern indicates a food allergy has since been shown to be inaccurate.

In non-seasonal atopic dogs, the incidence of food-induced AD is reported to be on average 20-30% with the remaining 70-80% environmental AD. There are atopic dogs that have both environmental and food allergen triggers of their AD, but we don't have a clear understanding of the prevalence. An abnormal gastrointestinal history is present in approximately 50% of CAFR dogs. Abnormal GI signs are not specific for CAFR as there are many other possible causes which may need to be considered. Abnormal GI signs seen in dogs with CAFR include an increased number of bowel movements per day (>3-4), inconsistent faecal grade, mucous or blood in the faeces, vomiting, eating grass to vomit, flatulence multiple times per day, burping and borborygmus. Specific questioning is needed, and it is helpful to use the Purina faecal chart. Only asking about the presence of diarrhoea and vomiting will not give sufficient detail and abnormalities will be missed.

Performing a strict elimination diet trial (EDT) is the only reliable method of diagnosing CAFR, and it is one of the more difficult tasks that we ask of an owner. The success of an EDT relies completely on the owner's compliance and so it is critical that they are fully invested in the process and understand exactly what is required of them. Support and communication from their veterinarian and nurses are critical to success.

Diet trials are difficult and expensive to conduct, so the goal should be to "do it once and do it right" so that the response, negative or positive, can be interpreted. The correct diet to choose will depend on several factors including the previous diets fed, the age of the patient, palatability and concurrent problems or diseases. A novel protein and carbohydrate source is required, and the usual approach is to use a commercially available hydrolysed diet derived from a novel parent protein for that patient, but a nutritionally balanced home-prepared diet is also an excellent option for some patients. Commercial novel protein diets are not recommended for an EDT because there is a high risk of contamination with other proteins, which is usually not deliberate but a consequence of the manufacturing process.

Taking the time to thoroughly discuss how a diet trial will work in the household helps to troubleshoot problems before they arise. For example, planning how they will give the dog medication, how they will keep the dogs separate when feeding, making sure they cannot get to the cat's food bowl and keeping the dog out of the kitchen

during mealtimes. It is also important to make sure the patient is not receiving any flavoured medications or flea/worm prevention. There are occasions when it is better to postpone a diet trial until there are fewer confounding factors – for example, after an important training program for a working dog, or after Christmas when there is less chance of the dog being fed extra food by guests. The more communication you and your team can have with the client the better the likelihood of success.

The recommended length of time for an elimination diet trial for diagnosing CAFR is at least eight weeks. This length was determined based on reviewing the information gathered in the literature from 209 dogs with CAFR. From this it was estimated that 50% of dogs had significant improvement after three weeks of a diet trial, 85% after five weeks and 95% after eight weeks. Less than 5% of CAFR dogs needed the EDT to continue to 13 weeks.

If the dog has abnormal gastrointestinal signs as part of the presentation these can improve within the first 2–4 weeks, so it is important to ask owners to monitor for any changes in these signs as well as cutaneous signs. If there has been no improvement in gastrointestinal signs after four weeks, then we will consider changing the diet used for the EDT.

Atopic dermatitis is a complex, multifaceted disease and when embarking on an EDT it is imperative that inflammation of the skin and ears, microbial overgrowth and secondary infection of the skin and ears and pruritus are all well controlled to enable interpretation of a negative or positive response. Delaying the EDT until otitis externa is controlled, for example, may be prudent.

A logical approach that helps with compliance and control is to divide the eight-week EDT into two four-week periods and to have scheduled rechecks.

A break-down of the steps is outlined below:

### First half of the elimination diet trial (0 to 4 weeks)

- Transition onto the elimination diet over the first 5–7 days.
- Use oclacitinib for symptomatic relief of pruritus (unless contraindicated) giving daily.
  - Use the non-flavoured tablets!
- Manage any secondary skin/ear infections as required.
  - Non-flavoured medications
- Manage any inflammation of the skin/ears as needed with a topical steroid.

### Half-way check-up at four weeks

- Questions about the diet trial
  - Has the diet been fed strictly?
  - Is the dog eating the diet well?
  - Any change in body weight?
  - Address any problems.
- Questions about the level of pruritus
  - Use PVAS for objectivity.
  - Pruritus should be absent or minimal.
    - If pruritus persists, then look for reasons why:
      - Inflammation
      - Infection
      - Non-compliance
      - Fleas
- Recheck skin/ears to monitor for resolution of inflammation and/or infection.
  - Visual inspection
  - Cytology
  - +/- Culture and sensitivity if not responding to antimicrobial therapy as expected.
- Questions about gastrointestinal signs if these were present.

- Expect improvement.
- If not improved:
  - Non-compliance?
  - Another cause of GI signs?
  - May consider changing diet for the EDT at this point.
- Continue with the strict elimination diet.
- Continue preventative maintenance regime for skin/ears as required. For example:
  - Continue weekly bathing and flushing/wiping ears every 1–2 weeks.
  - Continue topical steroid for skin/ears once weekly.
- Continue oclacitinib once daily but explain that over the next half of the EDT the plan is to test if oclacitinib can be withdrawn or not.

## Second half of the elimination diet trial (4-8 weeks):

- Continue with the strict elimination diet.
- Continue preventative maintenance regime for skin/ears as required.
- Instruct the owner to not administer oclacitinib for 1–2 days and monitor pruritus level.
  - If pruritus increases, then continue oclacitinib for another week and then try stopping again.
    - Continue trying to stop oclacitinib every week until recheck at the end of the EDT.
- If there is no increase in pruritus when oclacitinib is stopped then they have reached the end of the EDT
  - Schedule a recheck if this is earlier than the planned eight-week recheck.

## End of the elimination diet trial (eight weeks)

- Repeat questioning about compliance with the diet.
- PVAS for objective measure of pruritus.
- Was oclacitinib able to be withdrawn without relapse of pruritus?
- Recheck skin/ears to monitor for relapse of inflammation and/or infection.
  - Visual inspection
  - Cytology

## Interpretation of response

- Not pruritic without oclacitinib.
  - CAFR is possible.
  - Next step is provocative diet challenge.
- Pruritic without oclacitinib.
  - CAFR is unlikely.

If the patient's pruritus has resolved by the end of the EDT without oclacitinib (or other anti-pruritic) then a CAFR is possible, and a provocative diet challenge is the next step.

The first question to answer is: Does this dog have a food allergy or not? There is some variation in how this first step is conducted, but our usual approach is to start with reintroducing the previous diet along with any treats or supplements that were given regularly. Most dogs with CAFR flare within 3–5 days of re-exposure to the offending protein(s), and flares within 3–6 hours have been documented, so we instruct owners to monitor for pruritus and erythema closely and gradually reintroduce their previous diet over seven days. If there is no change after seven days, then owners are instructed to feed the previous diet for another seven days (14 days in total) to catch any delayed reactions. If there is no change in pruritus after 14 days of exposure to the previous diet(s), then it can be deduced that the dog does not have a food allergy to anything in the challenge diet. Monitoring for a relapse in abnormal gastrointestinal signs is also part of the process.

When there is no response to the diet challenge, but the dog had improved during the EDT then we assume that the improvement in the dog's clinical signs is attributed to the proactive management implemented for atopic dermatitis, i.e. managing microbial overgrowth, regular bathing/ear cleaning, topical steroid application, resolving skin/ear inflammation.

The other variable to consider is that over the two months of the EDT the airborne pollen counts may have changed significantly – for example, the EDT may have started at the end of Autumn and finished in Winter. This is the main reason why we encourage owners to proceed with the provocative diet challenge. It is not necessary for these dogs to continue a restricted diet, and we can introduce diets that are specifically designed for skin support.

If a dog does flare during the provocative challenge with their previous diet, then we can assume the dog has a CAFR. The final confirmation is resolution of pruritus when the challenge diet is stopped and the dog is fed the EDT diet, but this does rely on prompt recognition of a flare. These steps need to be carefully explained and discussed with the owner as we are again completely relying on their compliance and observation skills.

The final step is to look at the proteins contained in the challenge diet, including treats and supplements, and then sequentially challenge with each of the individual proteins separately for two weeks.

The most common food allergens listed for dogs are beef, dairy products, chicken, wheat and lamb. This list is based on a review of studies conducted by various groups internationally and the collated results from 297 dogs in total. At least one offending food allergen was reported in each of these dogs.

The evidence gathered was incomplete so the true prevalence of offending allergens is not clear and may change over time and with geographical location as our feeding habits change.

We have not specifically discussed cats in this lecture, but the same steps should be followed when conducting an EDT to assess for a food allergy in cats, with all of the feline idiosyncrasies to take into account!

## References

- Eisenschenk M.** The role of Diet, Nutrition, and Supplements in Canine Atopic Dermatitis. *Vet Clinics Small Animal* 55: 189–198, 2025
- Mueller RS, Olivry T.** Critically appraised topic on adverse food reactions of companion animals (3): prevalence of cutaneous adverse food reactions in dogs and cats. *BMC Veterinary Research* 13: 51, 2017
- Mueller RS, Olivry T.** Critically appraised topic on adverse food reactions of companion animals 4): can we diagnose adverse food reactions in dogs and cats with in vivo or in vitro tests? *BMC Veterinary Research* 13: 275, 2017
- Olivry T, Mueller RS, Prelaud P.** Critically appraised topic on adverse food reactions of companion animals (1): duration of elimination diets. *BMC Veterinary Research* 13: 225, 2015
- Olivry T, Mueller RS, Prelaud P.** Critically appraised topic on adverse food reactions of companion animals (2): common food allergen sources in dogs and cats. *BMC Veterinary Research* 12: 9, 2016
- Painter M et al.** Use of the Health Belief Model to identify factors associated with owner adherence to elimination diet recommendations in dogs, *Journal of the American Veterinary Medical Association* 255(4): 446–453, 2019
- Shimakura H, Kawano K.** Results of food challenge in dogs with cutaneous adverse food reactions, *Veterinary Dermatology* 32: 293–e80, 2021
- Sofou E, Aleksandrova S, Chatzis M et al.** Establishment of clinical criteria for the diagnosis of adverse food reactions in dogs with atopic dermatitis, *Veterinary Dermatology* 35: 418–431, 2024
- Stetina KM, Marks SL, Griffin CE.** Owner assessment of pruritus and gastrointestinal signs in apparently healthy dogs with cutaneous or noncutaneous disease. *Veterinary Dermatology* 26: 246–e54, 2015
- Vovk L, Watson A, et al.** Testing for food-specific antibodies in saliva and blood of food allergic and healthy dogs, *The Veterinary Journal* 245: 1–6, 2019