



## **Canine Allergic Dermatitis (CAD)**

Canine allergic dermatitis is characterised by inflammation of the skin triggered by underlying allergies. An allergy is when the immune system reacts to a molecule that it should usually ignore (the 'allergen') and mounts an inflammatory response. CAD causes intense itchiness for the dog (the medical term for which is pruritus) and is often distressing for both the dog and the owner witnessing it. Given we are working with a defective immune system, the problem can be difficult and time-consuming to treat.

There are many different symptoms seen in dogs with CAD, including:

- Chewing/licking the paws
- Rubbing along the floor
- Shaking the head or scratching/shaking the ears
- Fur loss
- Redness of the skin
- Unusual odour coming from the skin/coat/ears
- Crusting/scaling/dandruff

A dog could be allergic to any number of things but the most common allergic triggers are:

- Flea saliva
- Dietary components (e.g. certain proteins, gluten)
- Environmental molecules (such as pollens, grasses, plants) or organisms (e.g. dust mites, storage mites).

It is important to acknowledge that dogs commonly suffer with more than one allergy.

The underlying allergy generates a baseline level of itchiness – this is the immune system mounting the inflammatory response. Itchy dogs will scratch and chew at themselves until they damage the skin, opening the door for secondary microbial infection, a common consequence of CAD. Once the skin is inflamed, the protective barrier which normally keeps commensal organisms (bacteria and yeast that usually live on the skin) in check is damaged. These bacteria and yeasts (and sometimes fungi) then have the opportunity to over-grow, resulting in a secondary infection. The secondary infection then causes further inflammation and itchiness, which results in an itch-scratch cycle which can spiral out of control. It is therefore essential when addressing CAD that we treat any secondary skin infections and provide support for the skin barrier as well. It must be noted that any secondary bacterial infections will greatly increase the itchy sensation the dog is experiencing and we usually have to address this problem before we can judge the efficacy of the anti-allergy treatments.

If your vet suspects CAD they may recommend certain tests to look for evidence of external parasites or secondary infection. These can include taking a sample of hair, taking a tape sample or performing a skin scrape. This gives your vet more information on what is happening on your dogs' skin and will allow them to find the most targeted and effective way of managing your dog's CAD.

### **Management of CAD**

When managing CAD, there is rarely a single solution to the problem. A good clinical resolution usually results from a mixture of interventions, but you have to be prepared for things to take a little while to settle down. Suggestions your vet may make to help your dog include:

**Allergen avoidance** – This is only practical if the trigger allergen is known (e.g. grass) but simple lifestyle changes can help keep the itchiness at bay. Avoiding walking in certain areas or rinsing your dog with clean water after a walk can prevent allergens coming into contact with the skin and triggering an itch.

**Regular good quality parasite treatment** – Your vet can tailor a parasite regime to best suit you and your dog's needs. We usually recommend either Bravecto (a tablet or spot-on every 3 months for fleas and ticks) or Prinovox (a monthly spot-on for fleas and worms). It is important to make the distinction



between flea products from your vet (prescription-only or POM-V medication) and over-the-counter (general sale), as they vary greatly in efficacy, with many over-the-counter products failing to kill all of the flea life-stages. By preventing contact with fleas you are preventing the bite and the salivary contact which stimulates the itch.

**Diet trial for 8-10 weeks** - This helps to rule out your dog's diet as the trigger for the allergy. Allergy-specific diets will usually be hydrolysed (the proteins are broken down so small that they cannot act as allergens) or based on a novel protein that your pet won't have eaten before (e.g. venison). The diet must be fed exclusively for a minimum of 8 weeks with no additional treats/titbits. If the skin improves following the diet trial we then recommend feeding the original food, because if the CAD recurs this confirms dietary allergy. Alternatively, you may wish to stay on the new diet long term or try a novel protein diet to try to avoid unwanted symptoms. Your vet can advise you on what food to use for a diet trial.

**Topical treatments (shampoos, creams, foams)** - Your vet may recommend a topical treatment (something you apply to the skin) to treat secondary infection, soothe inflamed skin or improve the skin barrier or coat quality. The topical treatment will vary depending on what your vet is trying to achieve (e.g. antibacterial shampoo for a secondary bacterial skin infection or emollient cream to soothe inflamed skin). The efficacy of these treatments does rely on their correct application, so please always follow the instructions given by your vet.

**Antibiotics** - If there is severe or widespread secondary bacterial infection your vet may prescribe oral antibiotics. It is important to remember that not all antibiotics will treat all bacteria and your vet may recommend that you send a sample of the infection (for example some pus collected on a swab) to a laboratory who can identify the bacteria and advise on which antibiotic is likely to be most effective ("culture and sensitivity" testing). In the case of severe skin infection your pet may need antibiotics for up to 8 weeks.

**Skin supplements and special diets** - There are lots of different pet food supplements on the market aimed at maintaining the skin and coat quality. Most contain a mixture of different plant and fish oils to provide omega 3 and 6. Skin supplements help support the skin barrier therefore reducing the risk of secondary infection and improving skin/coat quality. They are also helpful for animals recovering from skin infections.

**Systemic immune- system-moderating medication** - Environmental triggers can be difficult to avoid so sometimes systemic (whole body) treatment is needed to prevent CAD flare ups. Options for systemic treatment include:

- Anti-histamine tablets
- Steroid tablets
- Apoquel tablets
- Cytopoint injections

There are various pros and cons to each treatment so it is best to discuss with your vet which is going to be the best treatment for your dog.

**Immunotherapy** - This involves administering a gradually increasing dose of the allergen/s that your dog is allergic to (by a vaccine injection) in order to gradually increase tolerance to it. The theory is that by encouraging tolerance you will reduce the allergic response and the symptoms associated with it. This can be a great way to manage dogs that are sensitive to environmental allergens as these are often unavoidable in day to day life. The limitations are that it is less effective in dogs with multiple allergies and can be expensive. It is also important to note that you will not know if it is working until an average of 10 months after starting treatment. During this time, the flare ups may need to be controlled using an anti-inflammatory.

If you think your dog may be suffering from allergic skin disease please book a consultation with the vet,



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who will be able to start investigating and advising you on the best way to manage this condition.