

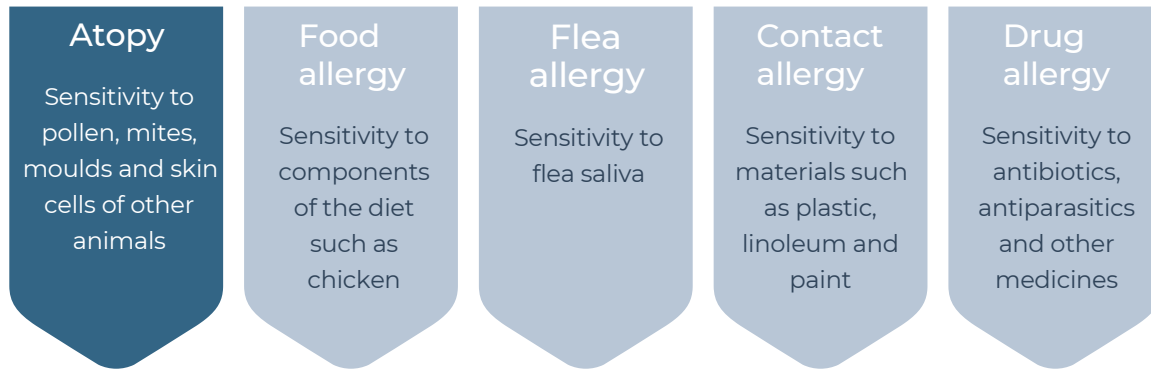


Understanding & Managing Allergy

Diagnosis and Treatment

Introduction

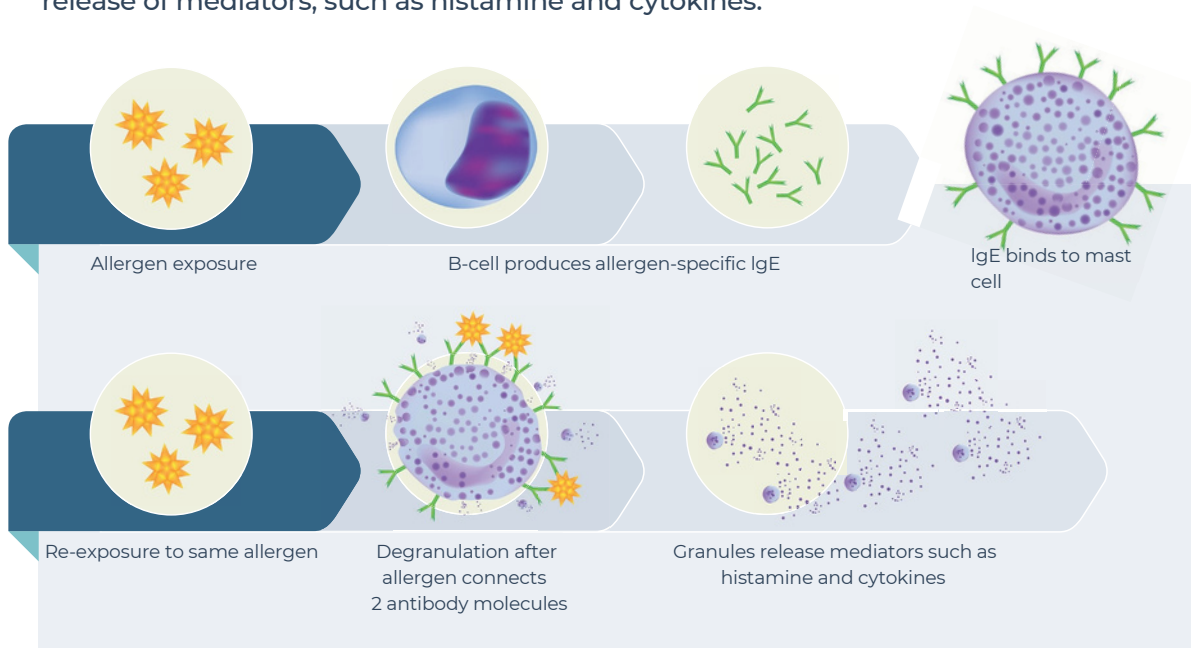
Allergy is a genetically predisposed condition of hypersensitivity to substances which are common and harmless to most animals.



Pathogenesis

When an animal is in contact with an allergen for the first time, its immune system will react by producing IgE antibodies. These antibodies are specific for the allergen.

When the animal encounters these allergens again, the allergen will be presented to a mast cell which is already connected to the allergen-specific IgE. This leads to the production and release of mediators, such as histamine and cytokines.



Atopic dermatitis

Atopic dermatitis is a hereditary form of allergy where the animal is sensitive to airborne substances from the environment, such as pollen, mites, moulds and dander.

It is thought to be the most common form of allergy (10-15% of the dog population¹)

Any dog can develop atopy but certain breeds are at a higher risk. Such breeds include the Lhasa Apso, Schnauzer, Boxer, Labrador, Golden Retriever, Poodle, West Highland White Terrier, Cairn Terrier, Jack Russell, Fox Terrier, Cocker Spaniel, Dalmatian, Bulldog, English Setter, Irish Setter and Chihuahua.



Orchard grass



Rye grass, perennial



Fescue, meadow



Timothy



Pellitory



Nettle



Birch



Hazel



Hazel



Mugwort



English plantain



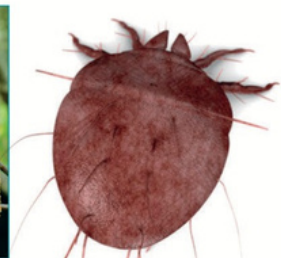
English plantain



Willow



Hazel



Hay mite



House dust mite

Clinical signs

The most obvious sign of an atopic condition is itching. Itching is caused by inflammatory skin, typically on the paws, head, armpit or groin.

Dogs often lick or bite their feet and can be seen rubbing their heads along the floor or other objects.

The skin inflammation can be exacerbated by bacterial (Staphylococcus) or yeast (Malassezia) infections.

Occasionally, atopic dogs will develop watery eyes, sneezing or asthma. Sometimes digestive symptoms appear. Allergy symptoms can be present throughout the year or only during a season, depending on the allergens that trigger the allergic reaction.

In most animals, the initial symptoms of atopy appear between 1 and 3 years of age.



- Itching
- Skin inflammation
- Ear inflammation
- Loss or discoloration of hair
- Watery eyes
- Sneezing

Ears

Appearance:

Waxy discharge; redness;

Behaviour:

Scratching or rubbing ears with paws or against furniture

Skin

Appearance:

Reddened; possibly with crusts or scales; odor with secondary infections

Behaviour:

Scratching and licking sides/belly, elbows, groin

Feet

Appearance:

Inflammation, redness, odor, brown discoloration where licking has occurred

Behaviour:

Licking and chewing of feet/pads

Face

Appearance:

Inflammation; redness; conjunctivitis;

Behaviour:

Scratching or rubbing face with paws or against furniture



Otitis externa
Recurrent pyoderma
Watery eyes
Sneezing
Asthma

Hair & Coat

Appearance:

Bald spots; brown discoloration where licking has occurred

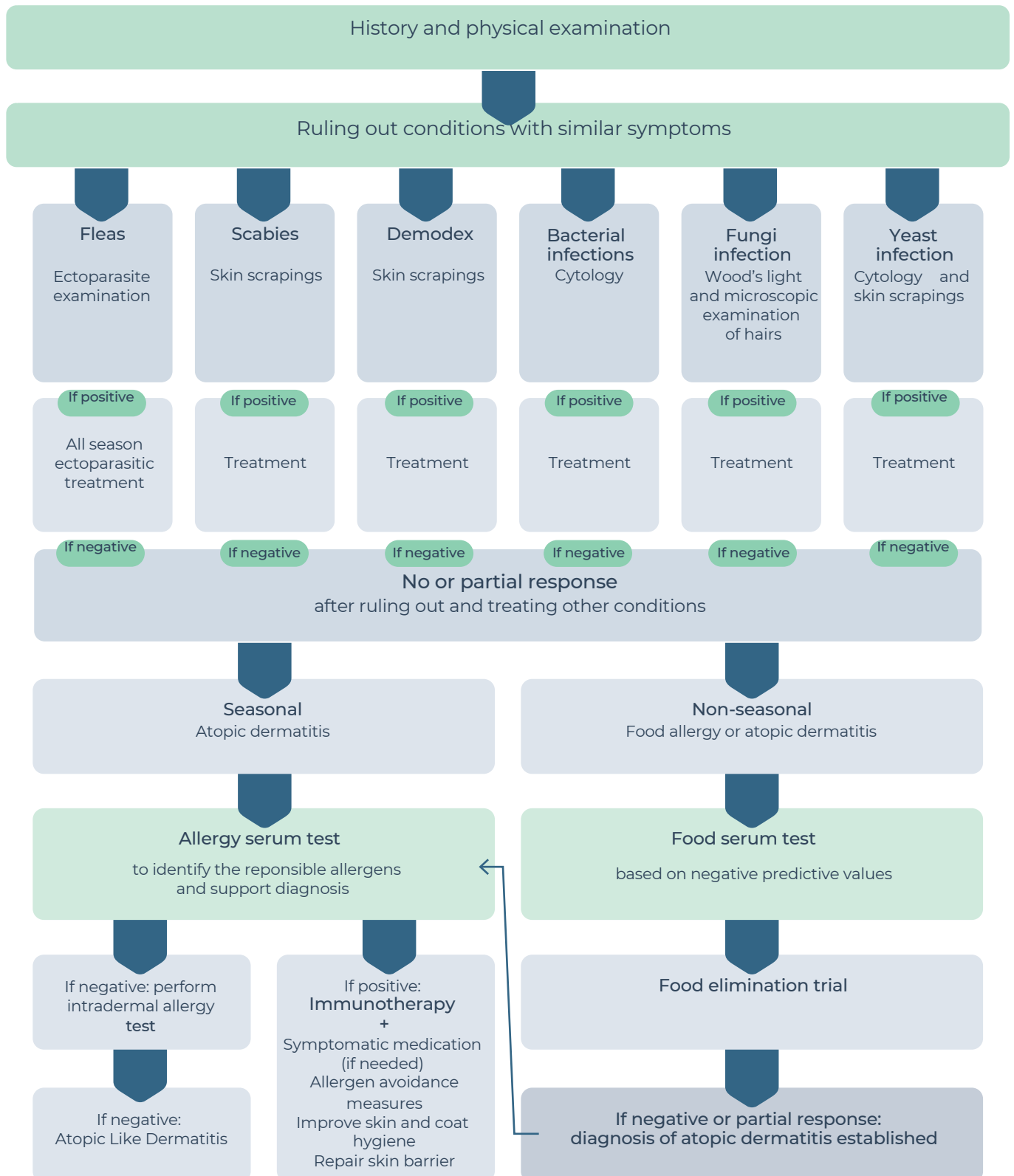
Behaviour:

Scratching sides/belly, rubbing face against furniture or carpet, licking



Diagnosis

The diagnosis of atopy should be based on the clinical history and by excluding other conditions that can present similar symptoms.



Treatment

Atopic dermatitis is a life-long condition, and for that reason any treatment option must be continued for life.

The best and simplest treatment is to avoid contact with the allergens. Unfortunately, most of the time this is not possible.

There are a number of short-term medications available to help control the allergy symptoms. These symptomatic medications, such as corticosteroids, cyclosporine, oclacitinib and lokivetmab are excellent at suppressing the allergic reaction, however they do not treat the root cause of the disease.

These medications can have significant disadvantages, especially when they have to be given as long-term

therapy over an animal's lifetime. For that reason, it is advisable to administer these medications for short periods.

After determining the cause of the allergy through an allergy test, it is possible to produce an allergen-specific immuno- therapy (hyposensitisation) specifically for each patient.

Allergen-specific immunotherapy is the only disease modifying therapy, which can make the immune system less sensitive, or not sensitive at all, to the allergens that trigger the allergic reaction.

Highest category of evidence and strength of recommendation

The international Task Force on Canine Atopic Dermatitis has concluded that allergen-specific immunotherapy has the highest category of evidence (COE 1a) and the highest strength of recommendation (SOR A) for the treatment of atopic dermatitis⁶.

Allergen-specific immuno-therapy can be injected subcutaneously with a monthly injection



Immunotherapy

- Treats the root cause, not only the symptoms
- Effective
- Safe
- Only licensed therapy in Europe
- Delivery within 10 working days
- Identical allergens for allergy tests and therapies
- 10 months treatment with only one vial
- One vial, one concentration
- Easy to use

Immunotherapy has proven efficacy and safety. It has very few rare side effects and can therefore be given for long periods.

Immunotherapy works by giving repeated doses of allergens, thereby stimulating an immune response in the body which leads to the build-up of immunological tolerance. It is the only treatment which alters the course of allergic disease while at the same time controlling the symptoms.

The efficacy rate of subcutaneous immunotherapy is 75%



Administration and dosage

Schedule

The first dosage starts at 0.2ml, after which it is gradually increased over longer intervals to a maximum of 1.0ml. When this dosage is reached after 12 weeks, a fixed dose of 1.0ml is administered monthly.

Allergy is a chronic disease and every 10 months a follow-up vial is required.

One vial of
Immunotherapy lasts
for 10 months.
Up to 8 allergens
per each vial

Adviced schedule	Dosage
Week 1	0.2 ml
2 weeks later (week 3)	0.4 ml
2 weeks later (week 5)	0.6 ml
2 weeks later (week 7)	0.8 ml
3 weeks later (week 10)	1.0 ml
3 weeks later (week 13)	1.0 ml
4 weeks later (week 17)	1.0 ml
4 weeks later (week 21)	1.0 ml

Maintenance period: 1.0 ml every 4 weeks.



Possible deviations

In some particular cases, it can be necessary to deviate from the standard dosing schedule, for example:

Are symptoms occurring or worse immediately after the vaccine injection and reducing after 1-2 days?

Sometimes the dosing schedule seems to be too quick for some animals. It is best to take a step back for 1 or 2 times in the dosing schedule (for example, giving 0.8 ml instead of 1.0 ml). If needed, symptomatic medication can be given concomitant to alleviate the symptoms and calm the skin.

Are the symptoms coming back 1-2 weeks before the new injection?

The interval can be too long for the animal. It is possible to adjust the interval to 0.8 ml every 3 weeks or 0.5 ml every 2 weeks. This then becomes the new maintenance dose. Adjusting the interval is only recommended if the dog was already on the maintenance dose (1.0 ml every 4 weeks).

Our allergy experts are always available to discuss particular cases in order to find the best schedule for your patient.



Management

A multimodal approach to allergy is very important. You can use in conjunction with immunotherapy other products that can help control the symptoms of allergy when necessary.

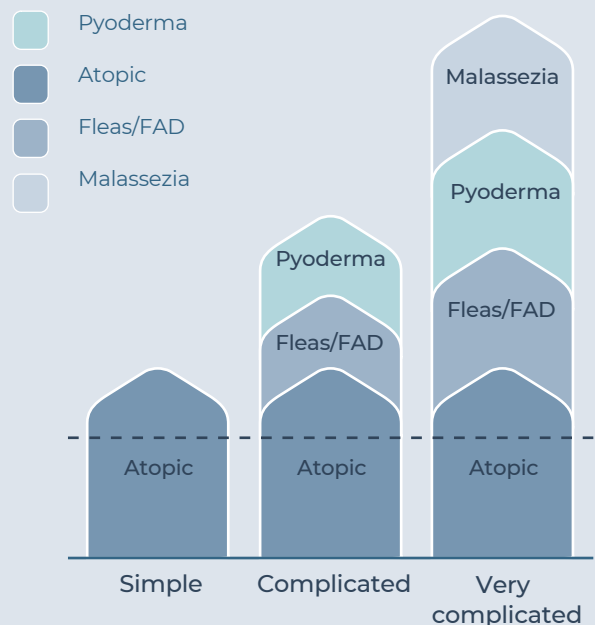
Products like EFAs can support the skin barrier and help control inflammation. Products and different measures can reduce significantly the exposure to allergens. For more information about these products, please refer to the last two pages of this brochure. Symptomatic medication can reduce allergic symptoms, especially during build-up phase of immunotherapy and in case of flare ups.

Pruritic threshold and flare-ups

In case of a flare-up, the symptoms suddenly appear or worsen. This means that the animal has risen above the pruritic threshold. It can happen due to different causes:

- more contact with allergens
- secondary infection (yeast, bacterial, etc.)
- other skin irritation due to fleas, swimming, more or less washing, etc.

With a flare-up, it is important to find the cause and prevent it. If the cause is unknown, it can sometimes be sufficient to correct the symptoms with temporary symptomatic medication.



A multimodal approach

A multimodal approach to allergy is very important. You can use in conjunction with immunotherapy, other products that can help control the symptoms of allergy when necessary.

Wash the coat regularly



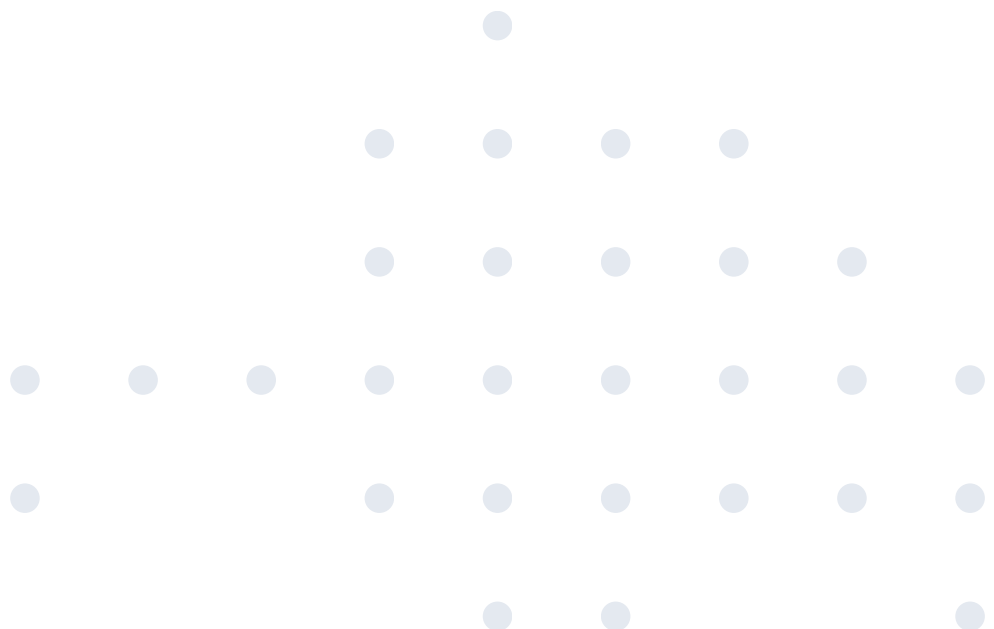
Environmental allergens like pollen and dust can easily come into contact with your pet's coat and skin. It is recommended to wash the coat and skin regularly to help remove these allergens. Regular bathing with a moisturising, anti-itch shampoo like Dermoscent Atop-7 Shampoo can help deeply cleanse the coat and skin.

For daily cleansing of the coat and skin, using an easy-to-use cleansing foam like Dermoscent Atop-7 Mousse can quickly help wash allergens off the coat whilst rehydrating the skin and repairing the skin barrier.

Wipe the paws

Many allergic patients suffer with itchy paws caused by allergens like pollen and dust. As a result of excess chewing and licking caused by the itching associated with allergy, many of these pets get bacterial +/- fungal problems on their feet.

To help reduce licking and chewing caused by environmental allergens, it is recommended to wipe the paws daily. Using a medicated wipe like CLX Wipes can also help manage the microflora on the skin and help prevent issues caused by excess licking.



A multimodal approach

Repair the skin barrier



Allergic dogs are known to have defects in their skin barrier, the body's natural defence against environmental allergens. When the skin barrier is not properly intact, allergens can penetrate the skin more easily and trigger an allergic reaction. It is important to help try and repair and strengthen the skin barrier in allergic patients.

Dermoscent Atop-7 Spray, Atop-7 Hydra Spray and Atop-7 Hydra Cream contain natural essential oils that help restore and repair the skin barrier. They also help moisturise the skin and reduce redness and itch.

Atop-7 Spot-On is an easy-to-use, once-a-week spot on therapy that can help strengthen the skin barrier.

Clean the ears regularly

Many allergic patients get recurrent ear problems. Inflammation associated with allergy can result in a change in the microclimate of the ear, meaning bacteria and yeast can more easily proliferate.

To help reduce the frequency of ear problems, it is recommended to clean the ears of patients who regularly get ear flare ups.

Using an antibacterial cleaner like Otodine can help manage ears of patients who have an imbalance of bacteria. Patients who are more prone to yeast overgrowth can be managed with an anti fungal cleaner like Clorexyderm Oto. For patients where the ear is prone to an excess production of ear wax, a cleaner like Otoact is recommended.



Maintain good skin hygiene



Many allergic patients get recurrent skin problems caused by an imbalance of the skin microflora. To help maintain healthy skin, it is recommended to cleanse the skin regularly using topical antibacterial and anti fungal products.

The Clorexyderm 4% skin range is antibacterial and anti fungal and can help soothe irritated skin. It is available as a shampoo with a short 5-minute contact time for improved owner compliance.

Clorexiderm 4% Foam and Spray are easy-to-use topical solutions that are ideal for localised areas of the skin when wet bathing may not be needed, or they can be used on their own when shampooing is difficult.

Dermoscent PYO-Spot is an easy-to-use, once-a-week spot on therapy that helps regulate the skin microflora and can extend the period of time between skin flare-ups.

A multimodal approach

Control environmental exposure



Avoid contact with allergens is the most effective way to treat the symptoms. Although most of the allergens are impossible to avoid, there are some preventive options than can help.

Pet's Relief® ALLERGONE is an innovative allergen neutralizing spray designed to reduce the exposure to house dust allergens. It provides a long term protection of 5 months after a single application.

Skin health supplements

It is believed atopy is associated with a defect skin barrier. This makes it easier for allergens to penetrate the skin and cause symptoms.

Dietary skin supplements can support and improve the skin barrier⁸.

Pet's Relief® ATOPI-3 is a complete and well-balanced dietary supplement that includes omega 3 (EPA and DHA), Zinc, MSM (methylsulfonylmethane), Vitamine A, Vitamine C and Vitamine E. It is specially developed to maintain the natural skin barrier, to promote skin repair, to help control excessive skin inflammation and to support neutralization of free-radicals (antioxidant).



Skin & gut microbiome regulators



Allergic patients have a dysbiosis of the skin microbiome, meaning they have a higher proportion of unhealthy microflora on the skin. This makes them more prone to skin flare-ups. There is also evidence that the gut microbiome plays a part in the overall health of the skin.

Linkskin Spray is specially formulated to help regulate the skin microbiome and promote the growth of beneficial skin flora. It also helps soothe itchy skin and reduce redness.

Linkskin Tablets contain pre and probiotic to help promote a healthy gut microbiome for beneficial effects on the skin.



What if my pet is allergic to food?

The most common allergens responsible for food allergy in dogs include beef, chicken, fish, dairy and soy proteins. Frequently the food has been part of their diet for a long time.

The symptoms can appear at any age, but in many cases first signs are seen when they are 1 year old. Food allergy symptoms are mainly present throughout the year (non-seasonal).

Besides the typical symptoms of allergy, between 10% and 15% of dogs with food allergy also seem to have gastrointestinal complaints, such as vomiting, diarrhea, weight loss and abdominal discomfort.



How can it be diagnosed?

The only way to diagnose food allergy is through a food elimination trial.

This trial consists by introducing a new diet (known as elimination diet) and should be followed for at least 6-8 weeks. If there is an improvement noticeable after this time, the previous (old) diet should be reintroduced for a maximum of 3 weeks to see if the symptoms reoccur.

If they do reoccur, then return to the new diet. If your pet improves again, the diagnosis of food allergy is confirmed.



It is very important that your dog does not consume any treats, snacks or flavoured medication during the food elimination trial

Which new diet can I give?

A food elimination trial can be done with a home-cooked diet, a commercial diet with hydrolysed proteins or a commercial diet that contains proteins your pet has not previously tried. It is not easy to determine a right option when it comes to selecting which elimination diet to use.

Commercial diets, even if with new proteins for your pet, can sometimes contain protein sources not declared on the label. In two studies, undeclared proteins were found in 83% and 90% of the tested foods.

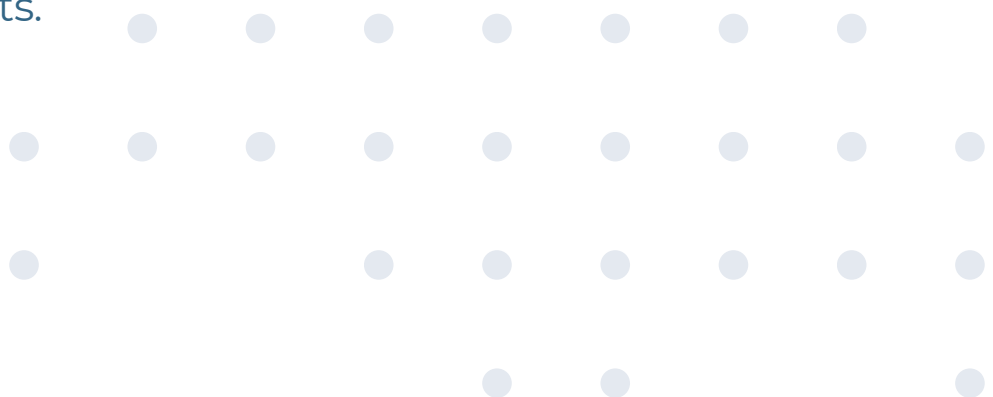
In commercial diets containing hydrolysed proteins, these proteins have been broken down into smaller pieces in order to prevent a reaction. There are conflicting studies on the effectiveness of hydrolysed diets, with 10% to 40% of patients who are allergic to the basic protein continuing to show symptoms on a hydrolysed version.

Home cooked diets are the most reliable option, however more time consuming and less practical.



How can my pet be treated for food allergy?

Once your pet has been diagnosed with food allergy, the only treatment is strict avoidance of the responsible food or its ingredients.





DIET TRIAL INSTRUCTIONS FOR DOGS

The only way to diagnose a food allergy is by conducting a diet trial (also known as food trial or elimination diet) and this in itself should be seen as a diagnostic test. The results of your dog's serum food test will guide the selection of the appropriate ingredients to be used in the diet trial.

FOOD TEST RESULTS

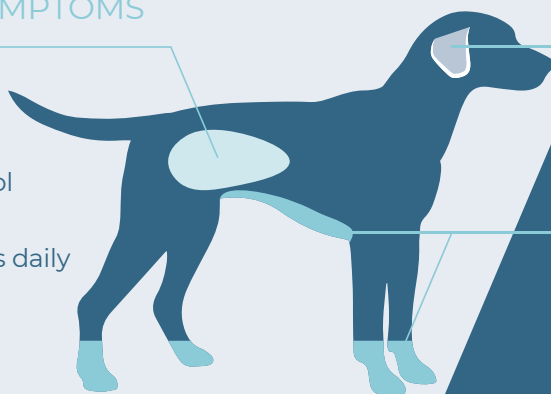
PROTEINS Mammalian	Candidate for Dietary Trial	Class Score	
		IgE	IgG
Beef		4	4
Cow's milk	✓	2	3
Lamb		0	0
Pork		3	1
Rabbit		4	1
Venison		1	1
Avian	✓	0	0
Chicken	✓	0	0
Duck	✓	0	0
Turkey		0	0
Whole egg		0	0

WHAT IS A FOOD ALLERGY?

A food allergy involves an immune reaction to one or more specific ingredients in the diet. The food in question is incorrectly viewed by the animal's immune system as a threat, resulting in the production of antibodies (part of the body's natural defence) against it. This can cause digestive symptoms, ear symptoms or skin symptoms, which may occur on their own or in combination, as shown below.

DIGESTIVE SYMPTOMS

Diarrhoea
Loose stools
Excess gas
Jelly on / with stool
Vomiting
More than 3 stools daily



EAR SYMPTOMS

Appearance: Smelly, irritated and inflamed, scabs
Behaviour: Scratching, rubbing

SKIN SYMPTOMS

Appearance: Smelly, irritated and inflamed, areas of hair loss, dandruff / scabs, greasy, skin colour change
Behaviour: Scratching, rubbing, persistent licking, chewing or nibbling

WHY HAS MY DOG BEEN PUT ON A DIET TRIAL?

It is impossible to tell just from their symptoms whether an itchy dog has a food allergy, an allergy to something in their environment, or both, because the symptoms can look exactly the same. Likewise, there are many other possible reasons for dogs to have digestive symptoms.

As part of the process to reach a diagnosis for the symptoms your dog is displaying, it is important to either rule-in or rule-out a food allergy. For dogs with skin symptoms this is normally done after infections (bacterial, yeast and fungal) and ectoparasites (fleas, mites and lice) have already been ruled-out and / or treated for. Those with digestive signs may have already had blood tests and / or a sample of their stool sent for analysis to rule out other causes.

WHY CAN'T I JUST USE MEDICATION?

For some dogs with food allergies, removing the problem foods from their diet will mean that their symptoms will completely resolve, preventing the need for life-long medication. Other dogs with skin and ear signs will have both a food allergy and other allergies in addition (usually to things in their environment), so you may only see a partial improvement when the problem foods are removed. This is still very beneficial though, because allergy is a life-long condition and the dietary changes may reduce the amount of medication they need. Food allergies are common, especially in dogs with skin or ear problems, so while it's important to recognise many dogs will not improve during the diet trial, the potential benefit for those that do makes it an essential part of the diagnostic work-up and well worth doing.



WHAT DOES A DIET TRIAL ENTAIL?

Conducting a diet trial means that for up to 8 weeks you will feed your dog a very strict diet consisting of only water, and:

- **The agreed food(s)** – this will either be a home-prepared or a commercial diet.
- **Necessary medications** – this may include treatment for the skin, ear or digestive symptoms. Follow your vet's advice on appropriate use during the diet trial. If any medications contain flavourings, alternative options may be recommended.

If your dog's symptoms improve, the original diet is given again to see if they return; only then do we know it was the diet that caused the improvement rather than something else (just a coincidence). Ideally, further investigation will then occur to identify which individual ingredient(s) in the diet are causing the reaction, so they can be permanently removed. In a small number of dogs, where there is no response to the initial diet trial, your vet may recommend a second diet trial using a completely different food.

HOW DO WE SELECT AN APPROPRIATE FOOD?

STEP 1: With your vet's support, identify ingredients that your dog has never eaten before; you can help find these by:

- 1 Using your NEXTLAB food test results – only consider negative scoring foods, where possible.
- 2 Completing a full dietary history – list all foods (commercial or otherwise) known to have been eaten by your dog.
- 3 Avoiding similar foods to those previously eaten - e.g., if beef has been fed, also avoid lamb, cow's milk and venison, as they could also trigger a reaction (your vet can help provide further guidance based on your dog's history).

STEP 2: Using the information gathered in step 1, choose the right type of diet to suit you and your dog from the choices below.

DIFFERENT TYPES OF DIET

HOME-PREPARED DIET	COMMERCIAL DIETS	
<p>This involves selecting one protein source and one carbohydrate. You will need to either regularly prepare this diet freshly for your dog or batch cook and freeze.</p> <p>BENEFITS: Very palatable, can be tailored to your dog's preferences, very limited number of ingredients and complete control of these, unusual ingredients can be used.</p> <p>DRAWBACKS: Substantial time commitment, can be expensive (depending on size of dog / ingredients), needs nutritionally balancing if feeding long-term or for growing dogs (the 8-week trial period is fine for most dogs but your vet will advise), a reaction to the food is still possible.</p>	HYDROLYSED	SINGLE PROTEIN
	<p>In a hydrolysed diet, the proteins have been broken down to a small enough size that they are unlikely to stimulate the dog's immune system.</p> <p>BENEFITS: Originally designed for diet trials, but are also suitable for long term use, minimal chance of causing a reaction, useful if dietary history unknown / eaten wide variety of foods, most are suitable for growing dogs.</p> <p>DRAWBACKS: Expensive, variable palatability, a reaction to the food is still possible.</p>	<p>These diets contain limited and / or unusual protein sources.</p> <p>BENEFITS: Palatable, can be less costly than hydrolysed diets, usually suitable for long-term feeding of adult dogs, some contain other ingredients that can benefit the skin / gut.</p> <p>DRAWBACKS: Often contain many ingredients overall, so increase the chance of causing a reaction. As a result, these diets are often used for long-term management rather than for the food trial. May be unsuitable for growing dogs.</p>

Please note, the term **hypoallergenic** is used for many different sorts of commercial diets; some of these may be hydrolysed or a single / novel protein but many are unsuitable for a diet trial. Your vet will be able to provide guidance.

IMPORTANT: A successful diet trial requires your full commitment. Be upfront and realistic when discussing options with your vet, both at the beginning and throughout, so that it can be adapted or modified to suit you and your dog.

STARTING THE DIET TRIAL

To minimise the chance of a digestive upset, gradually introduce the new diet over a period of 5 - 7 days. Slowly give more of the new diet and less of the old until it is completely replaced. If your dog has any digestive upset (vomiting / diarrhoea), refuses to eat the new diet, seems to be losing weight, does not have a bowel movement for more than 24 hours, or you are concerned for any other reason about the diet, please contact your vet.

Like any diagnostic test, a diet trial must be run properly in order to generate meaningful results, so it is very important to follow your vet's instructions completely. Below are some tips on making your dog's diet trial a success.



TIPS FOR A SUCCESSFUL DIET TRIAL

TREATS

- For treats during the diet trial there are a few ideas below; or you can use small amounts of the new agreed food as it is.
- If using a commercial diet, kibble can be soaked in water and baked to make your own treats.
- If using a home-prepared diet, use small amounts of the fresh, pre-agreed ingredients to make treats.
- Some commercial treats may be suitable if they contain just a single ingredient (e.g., 100% duck); check with your vet before you buy to make sure.

HIDDEN INGREDIENTS

- Avoid flavoured items such as supplements, toothpastes, toys and chews. Ask your vet for alternatives.
- Avoid using food to give medication during the diet trial, unless it has been agreed with your vet.
- Always check the additional ingredients listed on the packaging of any food used (commercial or home-prepared) to ensure they do not contain traces of the ingredients you are trying to avoid.

ACCIDENTAL EXPOSURE

- If possible, feed any other pets in the household the same diet. If not, feed them separately and remove their feeding bowls immediately afterwards.
- Avoid cross-contamination by thoroughly washing bowls, chopping boards, pans, utensils and your hands before preparing food. Use ceramic, stainless steel, or glass bowls, especially if skin symptoms are mainly around the face.
- Don't let your pet scavenge on walks or at family meal times and ensure they do not have access to bins or food cupboards. Consider using a basket muzzle if they are prone to scavenging. Ask your vet how to introduce your dog to a muzzle so that it is a positive experience.

GET EVERYONE INVOLVED

- Ensure everyone in the house, or involved in looking after your dog, fully understands the importance of following the rules, in order to make the results count.
- Use the diary on page 4 to record everything consumed by your dog during the trial, as well as any symptoms or changes in condition, to help you and your vet monitor their progress.





FURTHER ALLERGY RESOURCES

ALLERGY TESTING

For more information on allergy testing and how it may benefit your pet please scan the QR code below or visit:

<https://go.nextmune.com/allergytestingyourpet>



SCAN ME



UNDERSTANDING ALLERGY & ALLERGY MANAGEMENT

For a more in-depth look at allergy in pets, including information on how to diagnose and treat it as well as lots of other useful information please scan the QR code or visit:

<https://go.nextmune.com/theallergyjourney>



SCAN ME

