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Next+
Food Reactivity
Test

Food allergies

Diagnosis and management

Introduction

Adverse food reactions (AFR) encompass food intolerances as well as immunologically mediated hypersensitivities, that is, food allergies.

Adverse Food Reactions	Immunologic	Food allergy
	Non-Immunologic	Food intolerance
		Dietary indiscretion

Pathogenesis

The specific immunological mechanisms involved in food allergy are not clearly understood. It is hypothesized that immunological food reactions (food allergy) develop when a food specific IgE antibody on a mast cell binds with a food antigen.

This binding initiates mast cell release of potent inflammatory mediators and cytokines[1]. Although, it is believed that most food allergies are type I or IgE mediated, there is also some evidence to suggest Type III and IV hypersensitivity reactions may be involved[2].

Prevalence, age of onset and genetic predisposition

Among animals with pruritus and clinical signs of allergic dermatitis, **the prevalence of AFR is high enough to justify this syndrome to be ruled-out**

The true incidence of such reactions is still not entirely clear, but has been reported to range between 10% and 25%, in dogs with allergic skin disease[3]. It is also estimated to be around 1/3 of dogs with atopic dermatitis[3]. It is described a stronger incidence in dogs under 1 year of age or above 6 years old[4].

Labrador retrievers, West Highland White Terriers, Boxers, Rhodesian ridgebacks and Pug breeds are predisposed to developing AFR. The most common allergens responsible for AFR in dogs seemed to be beef, chicken, egg, milk, wheat, soy and corn, which are also common ingredients in many commercial foods[5].

Clinical Signs

Dogs suffering from AFR generally present with dermatological or gastrointestinal signs, or combination of both.

Dermatological signs are varied, and often indistinguishable from those associated with atopic dermatitis, although the presence of an unusual distribution or concomitant gastrointestinal signs may raise suspicion for an adverse food reaction.

When pruritus is not corticosteroid-responsive, a food allergy should be considered (if pruritus responds to corticosteroids that does not rule out the possibility that a food allergy is present).

Generalized or localized non-seasonal pruritus (face, ears, paws, axillae, inguinal and perineal regions) is the most frequently described dermatological sign. It is also possible for the effects of a food allergy to be below the 'itch threshold' and only observe flares of

- Non-seasonal pruritus
- Signs of allergic dermatitis
- Gastrointestinal signs
- Corticosteroid non-responsive

pruritus with the addition of environmental allergens during high pollen season. Otitis externa and recurrent pyoderma with or without pruritus has also been associated with AFR in dogs.

Gastrointestinal signs may include vomiting, diarrhea, weight loss, and abdominal discomfort.

Ears

Appearance:
Waxy discharge; redness; odor
Behaviour:
Scratching or rubbing ears with paws or against furniture

Face

Appearance:
Inflammation; redness; conjunctivitis; swelling
Behaviour:
Scratching or rubbing face 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

+ Otitis externa
Recurrent pyoderma
Vomiting
Diarrhea
Weight loss
Abdominal discomfort
Flatulence

Feet

Appearance:
Inflammation, redness, odor, brown discoloration where licking has occured
Behaviour:
Licking and chewing of feet/pads

Haircoat

Appearance:
Bald spots; brown discoloration where licking has occured
Behaviour:
Scratching sides/belly, rubbing face against furniture or carpet, licking

Diagnosis

Currently, the definitive diagnosis of food allergy in dogs is only possible through a food elimination trial followed by a food challenge test. The recommended length of this trial is, at least, 6 weeks.

Complete or partial improvement of pruritus during the trial is the main criterion for suspected food allergy. The diagnosis is confirmed by the recurrence of clinical signs when the food given previously is reintroduced. As animals may be multi sensitive, it may be necessary to attempt dietary restriction more than once.

The elimination trial can be done with a homemade diet, a commercial diet with hydrolyzed protein, or a commercial diet with proteins unusual for the dog.

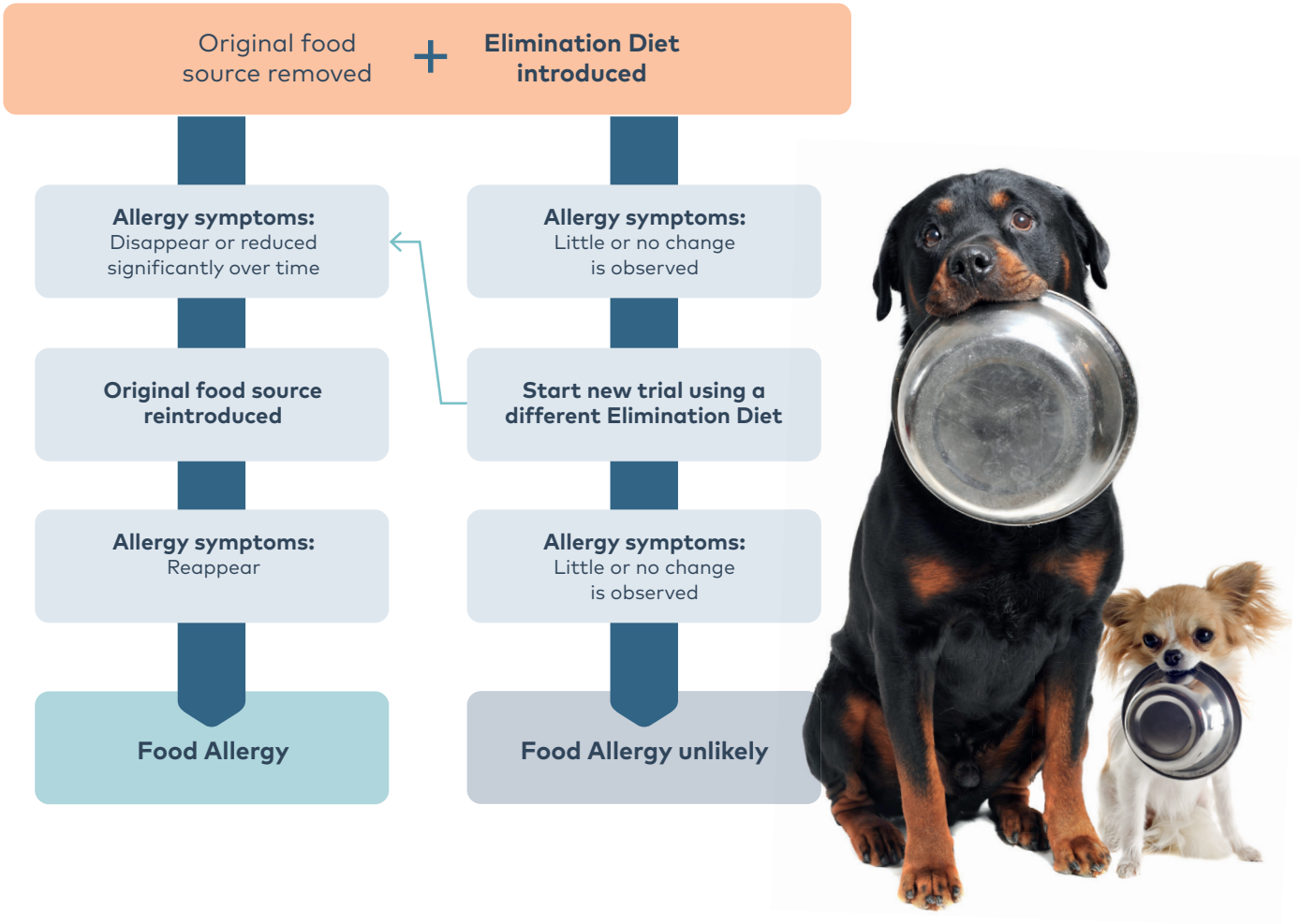
Commercial diets often contain larger protein molecules capable of inducing clinical deterioration in some dogs[6,7] or protein sources not declared on the label[8,9].

There are conflicting studies on the effectiveness of hydrolyzed diets for allergic patients, with 10% to 40% of patients allergic to the basic protein continuing to show clinical signs on a hydrolyzed version[7].

Home cooked diet is thus regarded as the most reliable diagnostic option, however less practical.

During the elimination diet, the dog must not receive any other food, treats, medications, vitamins, or supplements with any protein other than the one chosen for the diet.

Food elimination Trial - Food Challenge



Next+ Food Reactivity Test

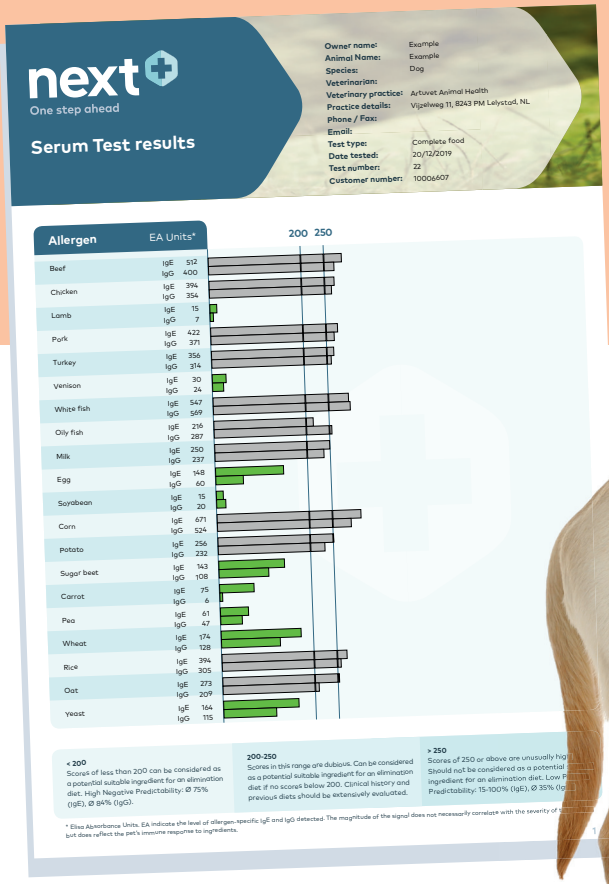
Although not diagnostic, combined assays of food specific IgE and IgG, represent a useful tool to identify a suitable composition for an elimination diet, when attempting to diagnose and manage a suspected adverse food reaction[10].

Which Elimination Diet should be used?

The testing of IgE on its own, represents a half-reliable tool. Evidence shows significant improvements when choosing an elimination diet based on combination of IgE and IgG results, when compared with IgE alone[10,11].

Generally, serum testing for food-specific IgE and IgG shown an average accuracy of 75%[12].High predictive negative values (Ø75% IgE and 84% IgG) represent a more accurate interpretation when compared with positive predictability (15-100% IgE and 35% IgG)[12].

Next+ Food Reactivity Test includes the results for food-specific IgE and IgG levels for 20 different allergens, together with clear advice on potential suitable ingredients and commercial diets for a food elimination trial.



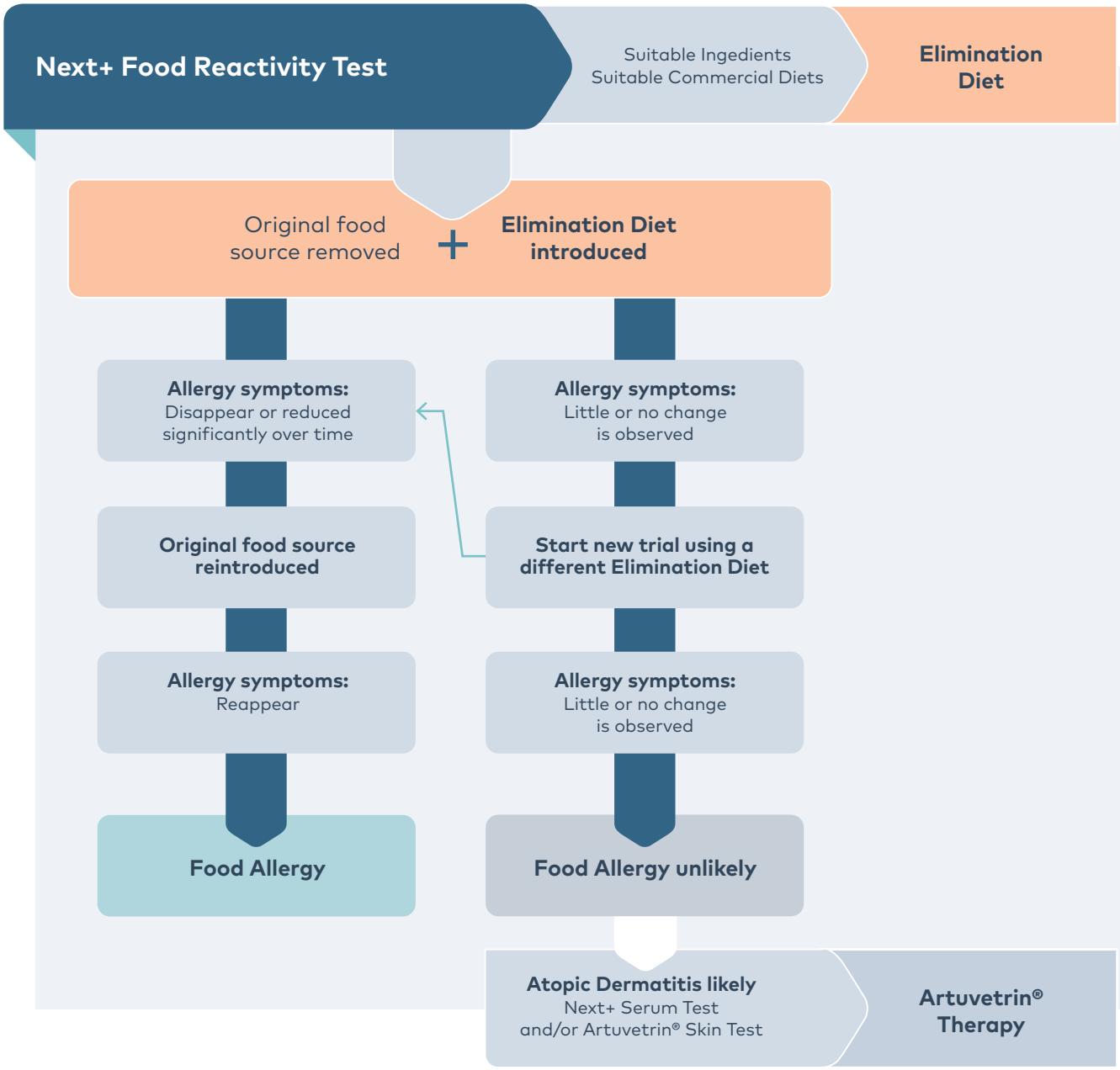
23 allergens x2 (IgE + IgG)

- Beef
- Chicken
- Lamb
- Pork
- Turkey
- Venison
- Horse
- Duck
- Rabbit
- White fish
- Blue fish
- Milk
- Egg
- Soya bean
- Corn
- Potato
- Sugar beet
- Carrot
- Pea
- Wheat
- Rice
- Oat
- Yeast

Management

Once food allergy is established, strict avoidance of allergen is the gold standard. Taxonomic relationship between protein sources should be considered to avoid the risk of cross-reactivity[13].

If the trial appears to have been performed correctly, but the patient did not improve or slightly improved, then it is likely suffering from atopic dermatitis and reacting to environmental allergens. Next+ Serum Test and/or Artuvetrin® Skin Test can identify these environmental allergens that your patient is reacting to and help you putting together an appropriate immunotherapy to treat the cause of the allergy – Artuvetrin® Therapy.



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