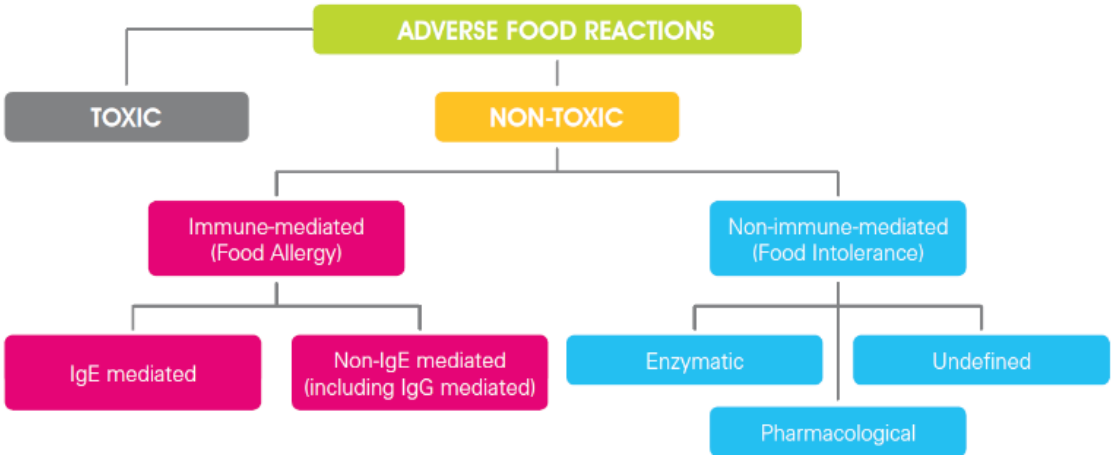
Food allergen identification for dietary trials - The role of IgE and IgG serology

What is an Adverse Food Reaction (AFR)?

- AFRs include both food allergies and food intolerances
- AFRs can present as pruritic skin disease, ear disease and/or as a gastrointestinal issue



How can IgE and IgG serology testing help?

Elimination diet trials are the only accepted method to reach a definitive diagnosis of an AFR, including food allergy. However, the role of food-specific IgE and IgG antibodies in the diagnostic work-up of AFRs is now increasingly accepted. Although not suitable to diagnose food allergies, certain serological tests can be used to help select an appropriate elimination diet due to their high negative predictive value.[1]

Strictly adhering to an elimination diet for the entire duration of the trial is often extremely challenging for owners. In addition, truly novel diets can be hard to identify, and research has shown that even highly hydrolysed diets can evoke a hypersensitivity response[2]. Serology testing can aid owner understanding, promote stricter compliance and ultimately increase the chance of a successful diet trial.[1]

How should IgE and IgG serology results be interpreted and used?

- Both IgE and IgG are included in testing as not all AFRs are IgE-mediated, and the determination of anti-food IgG can also be helpful.
- The more IgE-positive reactions, the more likely dogs are to be food allergic.[3]
- Foods that are negative to both IgE and IgG should be selected for a dietary trial.
- The dietary history must also always be taken into account and, where possible, cross-reactivity between similar foods should also be considered[4] (for example if positive scores are seen to chicken and turkey, all avian protein should be avoided).

Key points to remember:

- ✓ Common causes such as bacterial and yeast infections, and ectoparasite infestations, should always be ruled out before proceeding with IgE and IgG serological food testing
- ✓ The patient should have been on an unrestricted diet for at least two months prior to testing to prevent false negatives, as the IgE response is relatively short-lived
- ✓ The patient should be a minimum of six months old

1. Bethlehem S, Bexley J & Mueller R.S. (2012) Patch testing in the evaluation of adverse food reactions in the dog. Veterinary Immunology and Immunopathology 145: 582–589.
2. Jackson HA, Jackson MW, Coblentz L & Hammerberg B. (2003) Evaluation of the clinical and allergen-specific serum immunoglobulin E responses to oral challenge with corn-starch, corn, soy and a soy hydrolysate diet in dogs with spontaneous food allergy. Vet Derm 14(4):181-7.
3. Halliwell REW, Gordon CM, Horvarth C et al. (2005) IgE and IgG antibodies to food antigens in sera from normal dogs, dogs with atopic dermatitis and dogs with adverse food reactions. In: Hillier A, Foster AP, Kwochka KW (eds), Advances in Veterinary Dermatology Vol 5, Blackwells, Oxford, 28-35.
4. Bexley J, Nuttall TJ, Hammerberg B et al. (2017) Co-sensitization and cross-reactivity between related and unrelated food allergens in dogs - a serological study. Vet Dermatol 28: 31-e7.