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Intradermal Allergy Testing

What is intradermal allergy testing (IDAT)?

In animals that we suspect to have atopic dermatitis (environmental allergies), we often recommend IDAT to determine the components of a specially formulated allergy vaccine set. Animals with atopic dermatitis have increased allergen-specific IgE in the skin. IgE is an antibody that binds to the mast cells (immune cells). When the binding takes place, histamine is released and causes bumps and redness in the skin. When we skin test, we inject small amounts (0.05 ml) of common allergens into the skin. If the animal is allergic to that antigen, there will be excess IgE present and a reaction can be seen on the skin surface.

Why do we do intradermal allergy testing?

Once we know what your pet is allergic to, a hyposensitization vaccine can be made specifically for your animal. In general, up to 12 of the most reactive allergens are chosen for the vaccine. If there are more than 12 strong positive reactions, the allergens most prevalent in the animal's environment are chosen or a double vaccine is made. In some animals with a weak response to IDAT, results may be difficult to interpret. Therefore, in these cases a serum (blood) test can be performed to help combine selected allergens for the vaccine.

How do we conduct intradermal allergy testing?

Animals are sedated for the test. One side of the chest is then clipped, and allergens are injected into the skin. The allergens injected are listed below. Positive and negative controls are used to gauge the response. Saline is used as a negative control because it has no allergenic properties. Histamine is used as the positive control because it is the product that causes an allergic reaction. Allergens are compared with the controls. Often, a scale of 0 to 4 is listed or a positive vs. negative result is used.

What is needed before performing intradermal allergy testing?

To ensure that your pet has an accurate IDAT, they must not be given certain medications for a period of time prior to testing.

- ♣ Antihistamines should be discontinued 10 to 14 days before skin testing.
- ♣ Injectable steroids should be discontinued 8 to 12 weeks before skin testing.
- ♣ Oral steroids should be discontinued at least 4 weeks before skin testing.
- ♣ Topical steroids should be stopped 3 to 4 weeks depending on the strength of the steroid.
- ♣ Essential fatty acids (fish oil) should be discontinued 10 to 14 days before skin testing.
- ♣ Sedation can cause nausea. Please do not feed your animal the morning of the IDAT.

What should I expect after intradermal allergy testing, and what are possible side effects?

Pets are given a mild sedative intravenously to relax them and prevent movement during this 30-minute procedure. Your pet may appear groggy the remainder of today or may not be as active as normal. These effects should not be seen after 24 hours. We inject small quantities of allergens within your pet's skin. You will see an area where the hair is clipped and small dots were made to indicate the proper injection sites. In some cases, a topical medication may be applied to reduce the itching. If they scratch this area, a T-shirt can be worn to protect the skin. If itching persists for more than a day or two, please contact your veterinary dermatologist.

When do I receive the vaccine?

Vaccines are made specifically for your pet. This usually takes 2 weeks. We will call you when the vaccine is ready. At this time, you can schedule a vaccine administration demonstration appointment if requested.

The categories of allergens that are listed on your pet's intradermal allergy test result sheet are discussed below.

Mites

The mite category tests for hypersensitivity to the various mites listed on the intradermal testing panel. Many of these mites can be found in dust and are known as dust mites. Two of the most common and allergenic mites are tested for in the panel; however, in all there are approximately 36 species of dust mites. These mites feed on epidermal (i.e., skin) debris from people and animals, yeasts, molds, and remnants of household foods. Allergies to dust mites can be to the mite itself, its excreta, or the dead mite. Dust mites persist in the homes of people, regardless of how clean the house is. Other mites known as storage mites are found in hay, cereals, and house dust. These mites also pose as possible source of allergic stimulation to animals.

Insects

This category tests hypersensitivity to the various insects listed on the intradermal testing panel. Animals are exposed to these various insect allergens when insects feed on them, inject saliva or venom while feeding or stinging an animal, or leave potentially antigenic body parts or excreta which an animal can inhale, ingest, or absorb across the skin. The most common method of exposure to these allergens is by bites or stings from the organisms listed in this section.

Epidermals

This category tests hypersensitivity to various epidermal based allergens listed on the intradermal testing panel. These allergens are composed of hair or dead skin cells that are shed into the environment by both people and animals. Hair is generally believed not to be a significant allergen, as it often does not remain airborne for prolonged periods. However, these allergens can also be contaminated with saliva, serum, or urine that may increase their antigenicity.

Molds

This category tests hypersensitivity to various fungi listed on the intradermal testing panel. Fungi have a wide distribution, and fungal spores can compromise a large percentage of airborne allergenic particles in the environment. Most fungi of allergic significance are nonpathogenic fungi that feed on dead or decaying organic matter. Many types of fungi tend to release their spores after rainfall, fog, or during the hours of darkness, when the humidity is increased. Some fungi may also disperse their spores during dry conditions, with the greatest dispersal of spores often occurring on sunny afternoons when there is a light breeze. The fungi that make up molds can be found both outside in the environment and inside your house. Allergies to outdoor molds tend to be seasonal, peaking around mid-summer, while allergies to indoor molds are often year-round.

Smut

This category tests hypersensitivity to smut. Smut refers to a fungus that prefers to grow on and parasitize growing and developing grain. Grain smut is a type of fungus often found growing on wheat, oat, and barley.

Trees

This category tests hypersensitivity to various tree pollens listed on the intradermal testing panel. Deciduous trees (i.e., trees that shed their leaves annually) pollinate only for a very short period of time, usually around the time when the new leaves are developing. Trees typically pollinate in the spring before grasses, weeds and flowers.

Grasses

This category tests hypersensitivity to various grass pollens listed on the intradermal testing panel. Grass pollens are common throughout the world. In temperate regions of the US grass pollen counts are highest from mid-May to mid-July (i.e., in the summer, after trees pollinate and before weeds pollinate). In the northeastern US, most of the windborne grass pollen is from bluegrass and timothy grass; however, rye grasses are also important sources of grass pollens. In the southern US and along the Pacific coast, Bermuda grass is a major source of grass pollen.

Weeds

This category tests hypersensitivity to various weed pollens listed on the intradermal testing panel. Weeds are annual plants that grow wild with little to no agricultural/decorative uses. Weeds typically pollinate late in the season, after trees and grasses. The most important weed in relation to allergies is ragweed. There are several species of ragweed that are present throughout the US. Other species of weeds, such as marsh elder and cocklebur, may also cause allergic outbreaks in patients that are allergic to ragweed. Goldenrod pollen is typically carried by insects; therefore, pollen counts from goldenrod are only high near the plant.

Flowers

This category tests hypersensitivity to two flower pollens listed on the intradermal testing panel. The pollen from dandelions is usually carried by insects rather than airborne; therefore, dandelion pollen is typically present in high concentrations close to the plant only. As a result, dandelions do not usually cause allergies in humans; however, because dogs and cats are low to the ground and frequently sniff, they are more likely than humans to suffer from allergies to dandelion pollen. The same is true for daisy pollen.

Tobacco

This tests hypersensitivity to tobacco pollen. Tobacco pollen is primarily a concern in the southern US but is also grown in the Mid-Atlantic States and in Lancaster County, PA. Pollen counts from tobacco plants are highest in mid-summer.

Malassezia

This category tests hypersensitivity to *Malassezia*, a type of yeast that can cause skin infections in dogs and cats. Skin infections with *Malassezia* may cause itching in any animal, but animals with hypersensitivity reactions to *Malassezia* have intense itching during these infections.