

Managing Allergy





Dear Veterinary Practitioner:

Welcome to Heska's ALLERCEPT® Allergy Assessment and Treatment Program. We appreciate your trust and are confident we will provide the highest level of service and testing accuracy available.

Use of this starter kit requires only **3 simple steps:**

1
2
3

Collect patient serum sample.

Fill out request for testing and patient history.

Ship sample and order form using the boxes enclosed.

This guide to managing allergic disease is designed to lead you through the diagnostic process with your pruritic patients. Designated sections contain suggestions, tips and visual aids to quickly and efficiently put your patient on the path to relief. Instructions for proper sample collection and submission for ALLERCEPT IgE Testing have also been provided.

Tens of millions of animals suffer from allergies, yet only a small fraction are properly diagnosed, tested and treated. While working with allergic pets can seem daunting, with a systematic approach and advances in allergy technology, you can build a thriving allergy practice. Heska is a world leader in innovative solutions for veterinary allergic disease and holds many patents covering its allergy products. Heska's unique, patented ALLERCEPT Program technology can detect as little as 10 picograms (trillionths of a gram) of allergen-specific IgE and can be used alone or in conjunction with conventional intradermal skin testing to accurately identify the source or sources of an allergic reaction. Unlike many other serum IgE tests that can misidentify offending allergens based on the false-positive detection of allergen-specific IgG, Heska's use of the high-affinity IgE receptor assures that false positives resulting from IgG detection do not occur.

Heska offers an 83-Allergen Universal Companion Animal Panel, a 24-Allergen Food Panel and a 91-Allergen Equine Panel that can accurately identify offending allergens. With Heska, patient results are reviewed, recommendations for immunotherapy are made, and your patient can be started on a highly effective, safe, long-term solution to their allergy problem.

In addition to offering the most utilized serum IgE tests for dogs, cats and horses (the ALLERCEPT IgE Tests), HESKA® Veterinary Diagnostic Laboratories employs an on-site team of veterinary professionals trained to assist you with case consultations, test interpretations, diagnosis and treatment options.

Following strict quality control and quality assurance measures, Heska's lab services provide accurate, timely and reliable results, and the support veterinarians need to offer their patients the best care available.

When partnered with Heska, you receive the following:

» **SUPERIOR SUPPORT**

- HESKA Veterinary Diagnostic Laboratories
 - Easy-to-read and interpret test results within 2 business days after receipt of the sample.
 - A specialist's review of each case with allergen-specific immunotherapy recommendations.

» **FREE CONSULTATION**

- Direct access to veterinary allergy experts at [800.464.3752](tel:800.464.3752), [option 5](#).
- Veterinary professionals are available to answer your questions every step of the way.

IMPORTANT NUMBERS

For any questions on the use of this kit, please call [800.464.3752](tel:800.464.3752).

Heska's Veterinary Medical and Technical Consultants (MTC) includes on-staff veterinary allergy experts available for free case consultations and placement of immunotherapy treatment orders, Monday through Friday, 6 a.m. to 5 p.m., Mountain Time.

Phone:	800.464.3752, option 5
Fax:	970.619.3012
Email:	HeskaAllergy@heska.com

Other Important Numbers

Sales Customer Service:	800.464.3752, option 1
Technical Support Services (TSS) for Heska instrument support:	800.464.3752, option 3
Invoicing and Billing:	800.464.3752, option 2

TABLE OF CONTENTS

DIAGNOSTICS AND RULE-OUT TIPS

Step by Step: Allergy Assessment & Treatment for Cats & Dogs	3
Step by Step: Allergy Assessment & Treatment for Horses	4
Flea Combing	5
Skin Scrapings	6
Common Presentations of Skin Mites	7
Canine Scabies	7
Feline Scabies	8
Cheyletiella	9
Skin Cytology	9
Scotch Tape Prep	9
Direct or Impression Smears	10
Swab Method	11
Fine Needle Aspirate	11
Fungal Culture	13
Fungal Dermatitis	13
Collection, Inoculation & Results	13
Fecal Examination	14
Presentations Suggestive of Parasitism	14
Parasites Able to Produce Secondary Skin Disease	
Ectoparasites.....	15
Endoparasites (GI)	15

ALLERCEPT TESTING

Samples & Sample Handling	19
ALLERCEPT IgE Test with HESKA Veterinary Diagnostic Laboratories	
Sample Minimums	19
Collecting/Packing/Shipping Samples	19
ALLERCEPT Allergen Panels	19
Recommended Corticosteroid and Other Drug Withdrawal Times	20
Negative ALLERCEPT IgE Test Results	21
Main Ingredient List for Limited Antigen Canine Foods	25
Main Ingredient List for Limited Antigen Feline Foods	26

ALLERCEPT IMMUNOTHERAPY

Immunotherapy	27
Allergens	29
Sample ALLERCEPT IgE Test Results	30
Sample Immunotherapy Recommendations	31
Immunotherapy Guidelines	34

Subcutaneous Immunotherapy.....34
Sublingual Immunotherapy.....35

ENVIRONMENT: CONTROLLING EXPOSURE

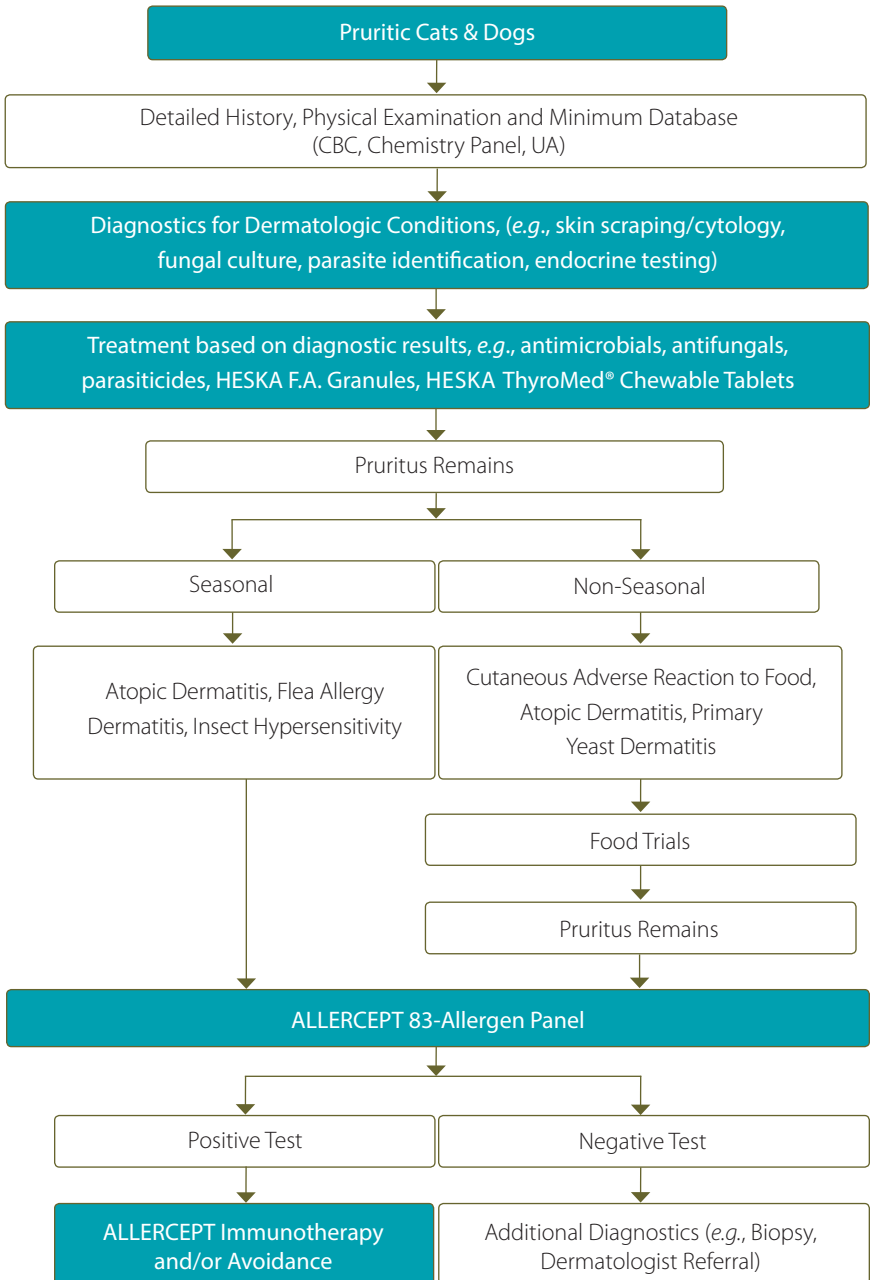
House Dust Mites 39
Storage Mites 39
Fleas 40
Pollen Allergens 41
Common Fungi/Molds 39
Common Molds and Their Locations 40

The background is a solid teal color. A large, stylized graphic of a plant with several leaves is positioned on the left side, extending towards the center. The leaves are outlined in a lighter shade of teal, creating a layered effect. The text is centered horizontally and vertically within the upper half of the page.

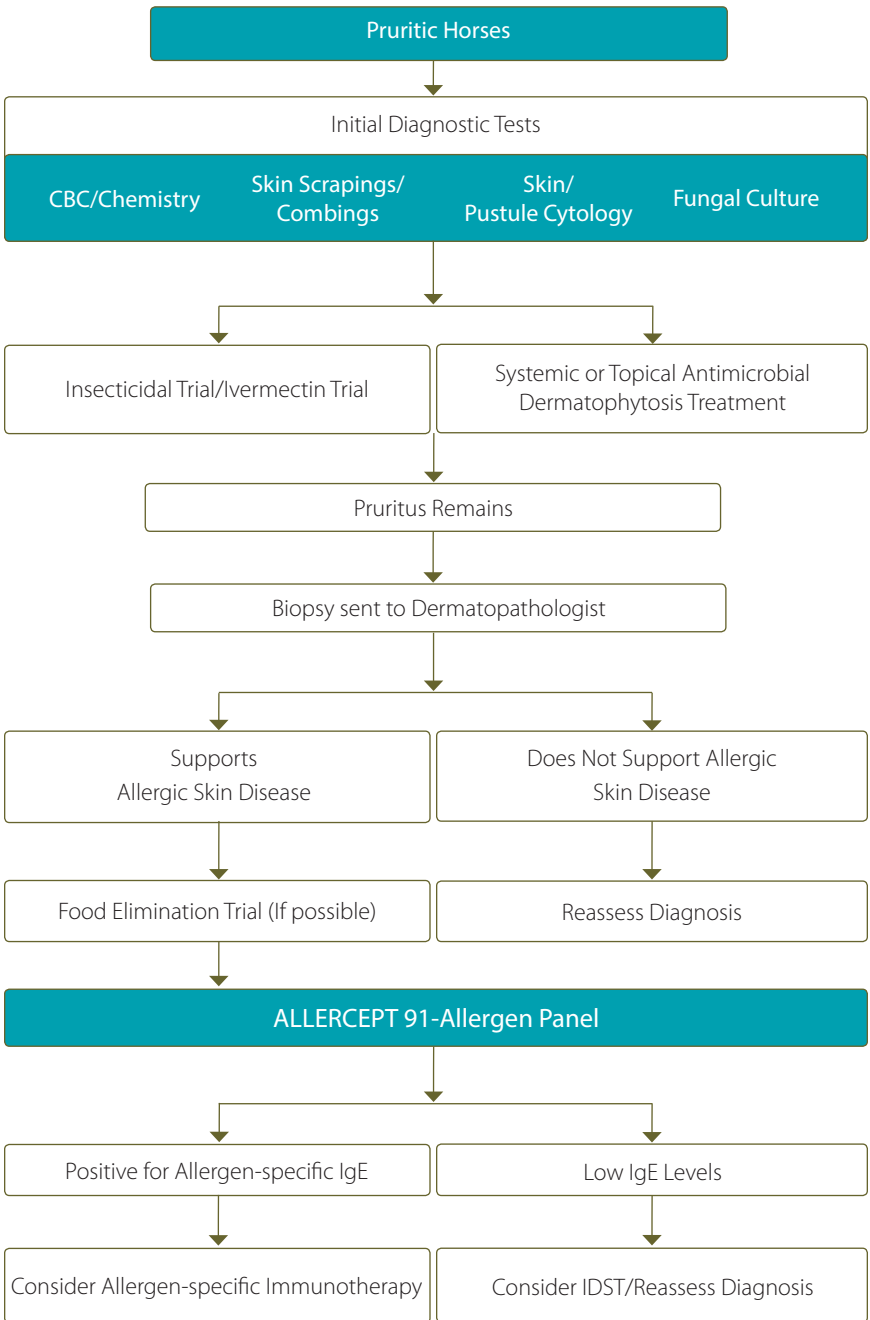
DIAGNOSTICS AND RULE-OUT TIPS

Step By Step: Allergy Assessment & Treatment for Cats and Dogs

Suspect allergic patients should have a proper diagnostic work-up as there are many causes of pruritus.



Step By Step: Allergy Assessment & Treatment for Horses



Flea Combing

A single flea bite can induce flea allergy dermatitis, producing severe signs of pruritus, inflammation, alopecia and secondary infection. If fleas are endemic in your geographic region, flea combing and debris inspection should be performed. After combing, collect the debris on a paper towel or gauze sponge and add a few drops of water. The flea dirt (flea feces) contains blood residue which, on a moistened paper towel, will appear as reddish brown spots.

Flea Infestation and Flea Allergic Dermatitis

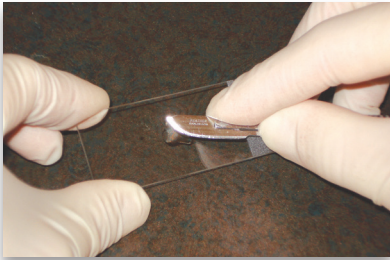


Skin Scrapings

All patients presenting with alopecia, erythema, pruritus, excoriations or dry flaky skin should have skin scrapes for mite infection. Mites can be collected by scraping the skin at the edge of a lesion either superficially or to the depth of the capillary bed.

Follow these steps:

1. Select an area at the edge of an alopecic lesion.
2. Do not scrub the area.
3. Use a scalpel blade (#10, 11, or 15) dipped in mineral oil.
4. Pinch the portion of skin to be scraped and with the blade at a 90 degree angle use short strokes to scrape the skin to the required depth.
5. Transfer the material to a clean microscope slide and evaluate at 10x and 40x.



Common Presentations of Skin Mites

Demodex Mite (deep scrape)



Common Presentations of Skin Mites (cont.)

Demodex Mite (deep scrape)



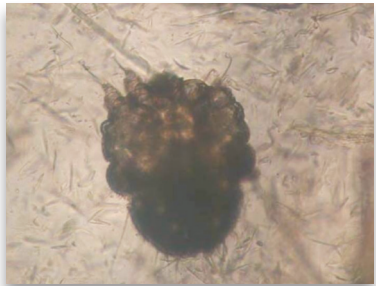
Photo Courtesy of University of Wisconsin-Madison, School of Veterinary Medicine

Canine Scabies

Sarcoptic Mange – Sarcoptes/Notoedres Mites (superficial scrape)

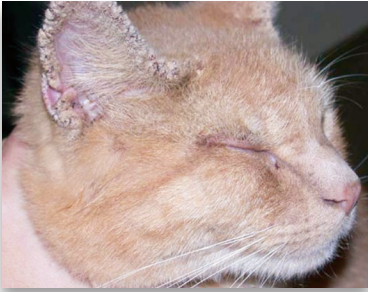


Photo Courtesy of University of Wisconsin-Madison, School of Veterinary Medicine



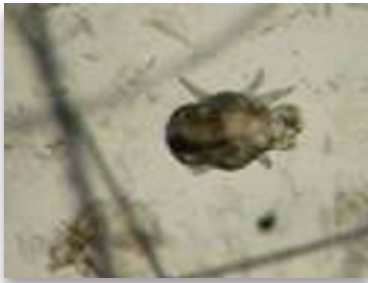
Feline Scabies

(Notoedric mange – superficial scrape)



Cheyletiella

(Superficial scrape)

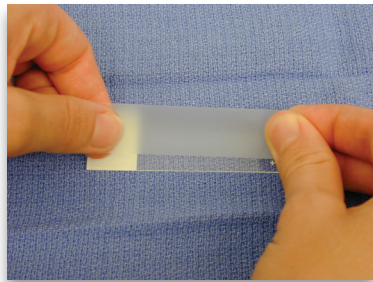


Skin Cytology

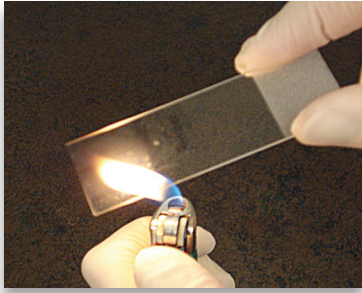
Patients presenting with skin lesions (e.g., alopecia, erythema, scaling) should have cytology performed to rule out a primary or secondary bacterial or fungal infection. The method of sample acquisition is determined by the type of lesion and the location.

Scotch Tape Prep

1. With moist, red and raw lesions or dry flaky skin, use a short strip of scotch tape and gently press the tape against the area of concern.
2. Apply the sticky side of the tape to a clean slide. Press lightly, then remove the tape.



3. Heat fix by passing the slide over an open flame (cigarette lighter or Bunsen burner) several times, stain (New Methylene Blue, Tri-color, Gram) and examine under 100x (oil).



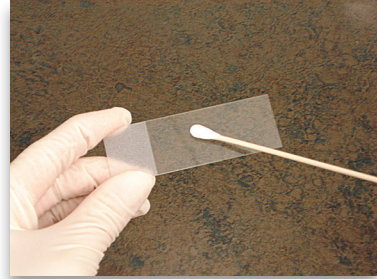
Direct or Impression Smears

1. For moist lesions with clear, purulent or bloody discharge (to identify fungal spores, hyphae, bacteria, and yeast), either aspirate fluid with a syringe and needle or place slide directly onto the lesion and apply gentle pressure.
2. Heat fix, stain and examine.



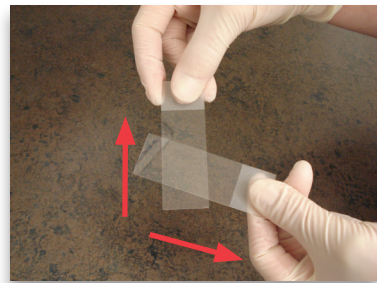
Swab Method

1. Use to obtain crusts and debris from ear canal, skin fold or interdigital areas.
2. Heat fix, stain and examine.

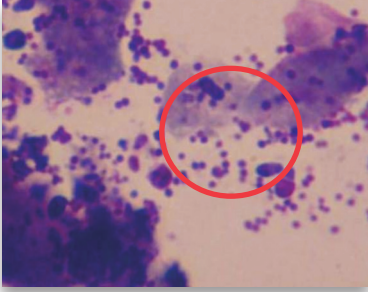


Fine Needle Aspirate

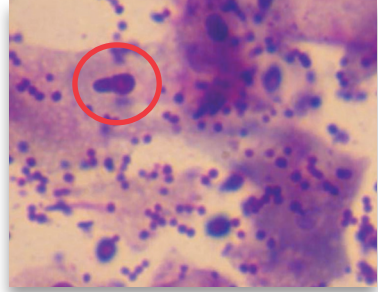
1. For masses within or below the skin, gently shave and clean the area to minimize contamination.
2. Insert a needle or needle with a syringe into the mass.
3. Move the needle through the mass in a sewing machine-like manner to collect cells. If a syringe is attached, pull the plunger to the back of the barrel to aspirate the cells.
4. Expel the contents onto a clean slide. Use a second slide drawn at a 90 degree angle to the first to make 2 sample slides.
5. Heat fix, stain and evaluate for fungal spores, hyphae, bacteria and abnormal cellularity.



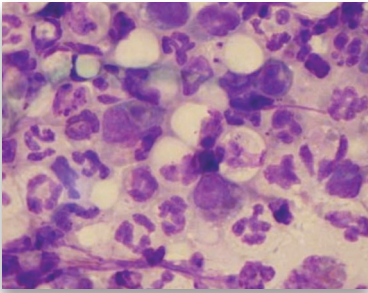
Bacteri
(Cocci)



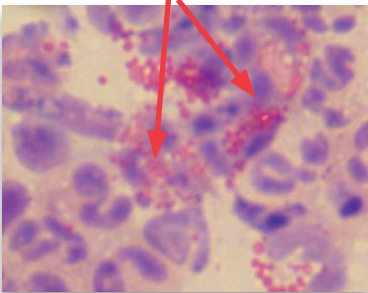
Malassezia
(Peanut-shaped yeast)



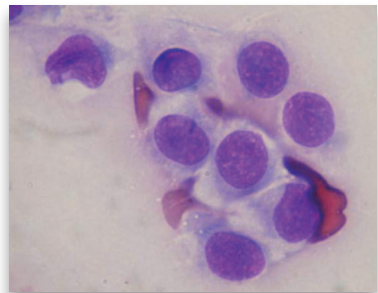
WBC –
Neutrophils & Macrophages



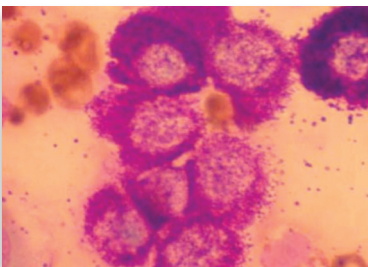
WBC – Eosinophils



Histiocytoma



Mast Cells



Fungal Culture

Dermatophytosis (ringworm) can mimic the presentation of many other skin infections. Therefore, all patients that present with skin lesions should have a fungal culture submitted to identify colony growth and media color change. Positive cultures should have colonies examined microscopically to confirm the type of pathogen present.

Fungal Dermatitis

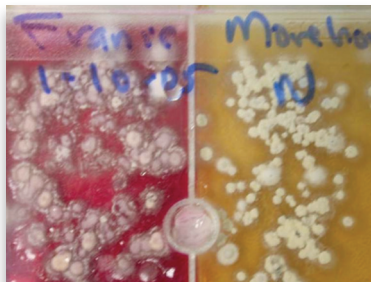
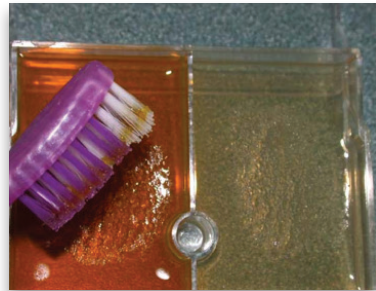


Photo Courtesy of University of Wisconsin-Madison, School of Veterinary Medicine



Collection, Inoculation & Results

Samples are collected using a clean, sterile toothbrush. Dermatophyte Test Medium (DTM) is then inoculated with the sample and is monitored daily for colony growth and a change in color to the media. It can take up to 4 weeks for adequate growth.

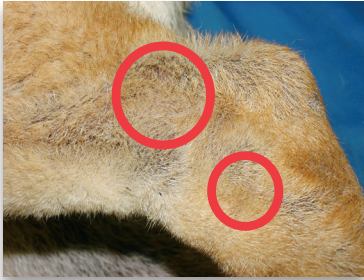


Fecal Examination

Some patients with endoparasitic (GI) infections can present with clinical signs of skin disease. A fecal exam (direct smear and float) should be performed on all patients with poor hair coat, alopecia, pruritus and chronic skin problems. Examination of fresh feces will allow identification of endoparasites and endoparasite ova.

Presentations Suggestive of Parasitism

Hair Loss



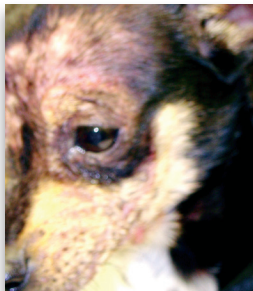
Moist Erythema



Trauma from Pruritus



Alopecia



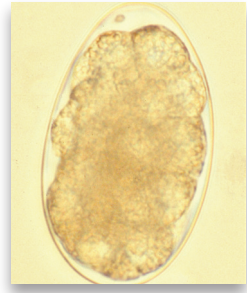
Fresh feces should be collected and examined grossly for obvious worms (e.g., tapeworms or roundworms). Following inspection, a direct smear should be performed and the slide examined under a microscope at 10x and 40x magnification to identify protozoa, ova and ectoparasites. In addition, a fecal flotation should be set up and evaluated for ova and parasites; use the 10x and 40x objectives.

Parasites Able to Produce Secondary Skin Disease Ectoparasites

Tapeworm Eggs

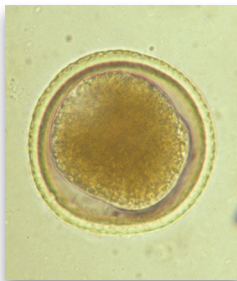
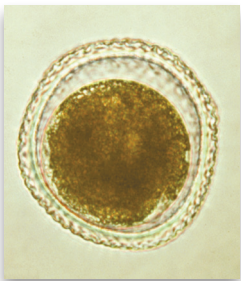


Hookworm



Endoparasites (GI)

Roundworm Eggs



Whipworm



For more information on diagnostics and rule-outs, visit www.heska.com.

Samples & Sample Handling

Once atopic dermatitis has been diagnosed and you are ready to progress to ALLERCEPT IgE Testing, there are 3 simple steps:

1. Collect patient serum sample.
2. Fill out request for testing and patient history.
3. Package sample and order form using the boxes and labels provided with your testing supplies.

ALLERCEPT IgE Test with HESKA Veterinary Diagnostic Laboratories Sample Minimums*

1. Canine and Feline
 - 2 mls of serum for a Companion Animal (83-Allergen) Panel
 - 1 ml of serum for a (24-Allergen) Food Panel
2. Equine
 - 3 mls of serum for the Equine (91-Allergen) Panel
3. Serum samples can be frozen and kept in a deep freeze for up to 6 months, if necessary.



*The serum quantity is considered sufficient if the bottom of the meniscus reaches the designated sample line in the tube provided.

Collecting/Packing/Shipping Samples

- Using standard laboratory methods, collect blood and place in red top or serum separator tube. Allow blood to clot for at least 20 minutes, spin tube down to obtain serum. Transfer serum into the plastic vial provided and securely tighten screw cap.
- Label vial with patient name, clinic name, and date.
- Wrap sample tube in absorbent material, place in plastic bag.
- Fill out appropriate Diagnostic Order Form (DOF) for test requested and include pertinent patient history.
- Copy DOF for your records.
- Place DOF in outer sleeve of plastic bag.
- Place sealed bag with sample and DOF inside the white cardboard box provided.
- Place box in FedEx® Clinical Pak provided.
- Affix preprinted FedEx Express® shipping label to FedEx® Clinical Pak.
- Retain top portion of label for shipment tracking and your records.
- Call FedEx Express® at 800.463.3339 for same-day pick up.

ALLERCEPT Allergen Panels

There are three ALLERCEPT Allergen Panels: Companion Animal, Equine and Food. Specific allergens in each panel can be found at www.heska.com/allercept.

Recommended Corticosteroid and Other Drug Withdrawal Times

In order to optimize the detection of allergen-specific serum IgE, withdrawal from corticosteroids is recommended before submission of some patient samples. The following chart contains suggested withdrawal times for animals who have been on steroids for more than three months. Animals treated with steroids for less than three months do not require withdrawal prior to sample submission as they are unlikely to have altered levels of allergen-specific IgE in their serum.

Animals treated with 5 mg/kg oral cyclosporine for up to one month do not require withdrawal prior to sample submission. (Goldman, *et. al.*, Vet Derm, 2010, 21:393.)

Treatment	Minimum Withdrawal Time
Oral Steroids	
Prednisone, Prednisolone	45 days (if > 0.25 mg/kg)
	21 days (if < 0.25 mg/kg)
Methylprednisolone	45 days
Triamcinolone	60 days
Injectable Steroids	
Triamcinolone	60 days
Methylprednisolone Acetate	90 days
Topical Steroids	
Otic and Ophthalmic Preparations	30 days
Steroid Shampoos	30 days
Sprays	30 days
Other Treatments	
Cyclosporine > 30 days	Contact Heska's Medical and Technical Consultants
Antihistamines	None

It should be noted that in a Heska study (unpublished data), about 50% of suspected atopic dogs with low scores on initial testing showed significant increases in levels of allergen-specific IgE when corticosteroids were discontinued for an extended period of time. These findings could not be explained by seasonal allergen variation. The above withdrawal times are thus general suggested guidelines. The required length of time for withdrawal may be affected by the overall duration of treatment and the type and dose of the product used, as well as individual variation in drug metabolism and immune system status.

For assistance, call Heska's Veterinary Medical and Technical Consultants at [800.464.3752](tel:800.464.3752), option 5.

Negative ALLERCEPT IgE Test Results


There is a subset of patients whose history and clinical signs are consistent with a diagnosis of allergy but their IgE test results (ALLERCEPT IgE Test or intradermal skin test) do not support that diagnosis.

Low levels of allergen-specific IgE may occur in atopic individuals for a number of reasons, for example:

- **Natural fluctuation**, especially due to seasonal exposure
- **Age**; younger animals or animals in their first season of allergic reactivity may have lower levels of allergen-specific IgE
- **Ongoing corticosteroid therapy** (topical, oral, parenteral) that may suppress IgE response in some individuals
- Presence of **metabolic or other uncontrolled systemic diseases** (e.g., hyperadrenocorticism, hypothyroidism) that may suppress circulating serum IgE levels
- **Atopic-like dermatitis (ALD)**

For these challenging cases, consultation with an allergy expert at Heska is recommended. [Call 800.464.3752, option 5.](tel:800.464.3752)

This section contains information on the most commonly available Limited Antigen Diets and the ingredients in those diets that are in the ALLERCEPT Food Panels. Note that Heska recommends performing a food trial prior to considering IgE testing for food allergy.


 Main ingredient included in the diet.

Please Note: Contents of commercial diets may be subject to change based on availability of individual ingredients. The optimum way to determine specific ingredients in a particular diet is to call the manufacturer of the diet.

* Certain ingredients are not listed on this chart because they are not included in the ALLERCEPT Food Panel.





















**Canned does NOT contain soybean.


ALLERCEPT Food Panel—Main Ingredient List for Limited Antigen Canine Foods

	Heska's Tested Ingredients	Apple	Barley	Beef-Cooked	Brewer's Yeast	Carrot	Chicken-Cooked	Corn-Cooked	Egg Whole	Fish Mix	Flax	Green Beans	Lamb-Cooked	Milk	Oats	Pea	Peanut	Pork-Cooked	Rabbit	Rice-Cooked	Soybean	Sweet Potato	Turkey	Wheat Grain	White Potato
Iams® Veterinary Formulas Skin & Coat Response™ (800.535.8387)																									
FP/Canine – Dry & Canned																									
*KO/Canine – Dry																									
Hill's® Prescription Diet® (800.445.5777)																									
*d/d® Potato & Duck Formula Canine – Dry & Canned																									
d/d® Potato & Salmon Formula Canine – Dry & Canned																									
d/d® Potato & Venison Formula Canine – Dry & Canned																									
d/d® Rice & Egg Formula Canine – Dry																									
z/d® ULTRA Canine – Dry & Canned																									
ROYAL CANIN Veterinary Diet® Canine (800.592.6687)																									
HYPOALLERGENIC HP™ – Dry																									
HYPOALLERGENIC PS – Dry																									
*POTATO & DUCK FORMULA™ – Dry & Canned**																									
POTATO & RABBIT FORMULA™ – Dry & Canned**																									
VEGETARIAN FORMULA™ – Dry & Canned																									
POTATO & VENISON FORMULA™ – Dry & Canned**																									
POTATO & WHITEFISH MODERATE CALORIE™ – Dry																									
POTATO & WHITEFISH LARGE BREED FORMULA™ – Dry																									
POTATO & WHITEFISH FORMULA™ – Canned																									
ULTAMINO™ – Dry																									
Purina Veterinary Diets® Therapeutic Canine Formulas (800.222.8387)																									
DRM Dermatologic Management™ – Dry																									
HA Hypoallergenic® – Dry																									
HA Hydrolyzed™ Chicken Flavor – Dry																									

This section contains information on the most commonly available Limited Antigen Diets and the ingredients in those diets that are in the ALLERCEPT Food Panels. Note that Heska recommends performing a food trial prior to considering IgE testing for food allergy.

ALLERCEPT Food Panel—Main Ingredient List for Limited Antigen Feline Foods

	Heska's Tested Ingredients	Apple	Barley	Beef-Cooked	Brewer's Yeast	Carrot	Chicken-Cooked	Corn-Cooked	Egg-Whole	Fish Mix	Flax	Green Beans	Lamb-Cooked	Milk	Oats	Pea	Peanut	Pork-Cooked	Rabbit	Rice-Cooked	Soybean	Sweet Potato	Turkey	Wheat Grain	White Potato	
Iams® Veterinary Formulas Skin & Coat Response™ (800.535.8387)																										
LB/Feline Canned Formula																										
Hill's® Prescription Diet® (800.445.5777)																										
*d/d® Duck & Green Pea Formula Feline – Dry & Canned																										
d/d® Venison & Green Pea Formula Feline – Dry & Canned																										
z/d® ULTRA Feline – Canned																										
z/d® Low Sensitivity Feline – Dry																										
ROYAL CANIN Veterinary Diet® Feline (800.592.6687)																										
HYDROLYZED PROTEIN ADULT HP™																										
*GREEN PEAS & DUCK FORMULA™ Dry & Canned**																										
GREEN PEAS & RABBIT FORMULA™ Dry & Canned**																										
GREEN PEAS & VENISON FORMULA™ Dry & Canned**																										
Purina Veterinary Diets® Therapeutic Feline Formulas (800.222.8387)																										
HA Hypoallergenic® – Dry																										

 Main ingredient included in the diet.

Please Note: Contents of commercial diets may be subject to change based on availability of individual ingredients. The optimum way to determine specific ingredients in a particular diet is to call the manufacturer of the diet.

* Certain ingredients are not listed on this chart because they are not included in the ALLERCEPT Food Panel.

**Canned does NOT contain soybean.

ALLERCEPT IMMUNOTHERAPY



Immunotherapy

Allergic patients are initially managed with a combination of antihistamines, fatty acids and shampoos. Positive effect can be seen with these products but often the benefit is limited or temporary. Steroids also provide short-term relief but prolonged use can have serious side effects. To date, immunotherapy is still the safest, most effective treatment for patients with allergies.

Heska is committed to providing innovative solutions, and we've put our scientific expertise into the ALLERCEPT Allergy Assessment and Treatment Program. On-staff allergy experts review each individual case and make immunotherapy recommendations specifically for each patient based on clinical history, ALLERCEPT Program test results, and geographic location.

Heska proudly offers two different formulations of immunotherapy; subcutaneous and sublingual. Each patient will respond differently to immunotherapy and some may respond better to one formulation than the other. Which option to choose should be based on several factors, such as:

- Patient temperament – will they tolerate injections? Are they head-shy and not amenable to having their muzzle handled for the twice daily administration of medication?
- Are the owners able to ensure the twice daily dosing required for sublingual treatment (*i.e.*, do they travel frequently, making this dosing schedule challenging)?
- Is mold immunotherapy indicated for the patient? Molds are generally not included in subcutaneous formulations as they produce enzymes that can degrade other allergens. This is not a problem with the sublingual formulation.
- Has the patient been on one formulation previously and did not respond/had adverse reactions?

There is no single treatment that works perfectly for all allergic patients. Often, the best improvement in clinical signs is achieved through a multi-modal approach, especially if other conditions exist, such as food allergies, flea allergy dermatitis, underlying endocrine disease, or recurrent skin/ear infections.

In order to maximize your patients' treatment experience, we recommend the following:

- For subcutaneous immunotherapy:
 - Provided schedules are recommendations only. Please call Heska's Medical and Technical Consultants at [800.464.3752](tel:800.464.3752), [option 5](#), to discuss customized treatment when necessary.
 - The first 11 injections should be administered in the clinic.
 - Proper handling and storage of personalized subcutaneous immunotherapy sets is critical. These sets are not shipped on ice but should be refrigerated upon arrival, and they must stay refrigerated once they have been opened. DO NOT FREEZE.

- Most treated animals have positive response to injections within 4–12 months. These patients may be safely maintained on immunotherapy for their lifetime. Treatment should be continued for at least 12 months before deciding whether or not it is beneficial.
- If mold extracts are desired in the prescription, we recommend that they be ordered as a second prescription to be administered separately. An alternative is to initiate therapy as recommended and add mold extracts later if the patient response is suboptimal and all other underlying causes have been ruled out.
- For sublingual immunotherapy:
 - If the patient had an adverse reaction previously to subcutaneous immunotherapy, we suggest administering the first dose of sublingual immunotherapy in the clinic.
 - The twice daily dosing schedule usually remains the same for all patients for the duration of treatment. Although rare, please call Heska's Medical group for guidance if the animal has an adverse reaction.
 - Treatment sets are stored at room temperature.
 - Many patients will have a positive response to the sublingual formulation within the first 1–3 months. Treatment should be continued for at least 10 months before deciding whether or not it is beneficial.
 - Molds can be included in the sublingual formulation without adversely affecting the integrity of the other allergens.

Regardless of the treatment you choose, a daily journal should be kept by the owner. Clinical signs, improvements, adverse reactions and associated events (*e.g.*, feeding, injection, rolling in grass) should be noted and discussed with the veterinarian on a regular basis.

Allergens

ALLERCEPT IgE Test results provide the foundation for appropriate selection of allergens for specific allergy treatment. While steroid drugs are often used for short-term relief from the clinical signs of allergy, prolonged use of steroids can have serious side effects. Antihistamines, fatty acids and shampoos can help but typically provide only temporary and limited benefit. Immunotherapy is by far the safest, most effective treatment for pets with allergies.

With routine allergy cases, general practitioners can test and treat with confidence. Heska will guide you through the process providing:

- An easy-to-read results summary within 48 hours of receiving the sample, (See sample on page 30).
- A recommendation for precise allergen-specific immunotherapy treatment, (See sample on page 32).
- Free case consultation with Heska's Veterinary Medical and Technical Consultants.

Currently the best results are obtained with immunotherapy sets consisting of the minimum number of relevant allergens. This approach assures that the requisite amounts of the major allergens necessary to effect immunologic changes are given. Immunotherapy recommendations for each patient are only recommendations; they can be modified by the veterinarian according to factors specific to the pet's history or environment. Allergen choice is based on:

- Botanical zone
- Number, distribution and strength of IgE reactivity
- Allergen cross-reactivity
- Seasonality
- Pollens of allergic importance

(See next page for sample results.)

Sample ALLERCEPT IgE Test Results



HESKA® Veterinary Diagnostic Laboratories
 3760 Rocky Mountain Avenue
 Loveland, CO 80538

Account #: 434808
Veterinarian: Jones
Clinic: FRIENDLY PAWS ANIMAL CLINIC
Address: 123 FIRST STREET
City/ST/Zip: FORT COLLINS, CO 80525
Clinic Phone: (970) 493-7272 **Fax:** (970) 619-3009
Owner Name: Cooper, Sheldon
Patient Name: Olivia **Sex:** F **ID:** 4000002
Species: CANINE **Breed:** IRISH SETTER **Birth Yr:** 2011

Accession: 14100001 **Collected:** 02/10/14 **Received:** 02/12/14 **Reported:** 02/13/14

Grasses	HERBU
June grass (Kentucky Blue)	231 +++
Meadow Fescue grass	117 +++
Orchard grass	≤10 NEG
Perennial Rye grass	28 ++
Red Top grass (Bent)	≤10 NEG
Timothy grass	≤10 NEG
Sweet Vernal grass	≤10 NEG
Brome grass	≤10 NEG
Oat pollen	≤10 NEG
Johnson grass	173 +++
Bahia grass	≤10 NEG
Corn pollen	≤10 NEG
Bermuda grass	≤10 NEG

Weeds	HERBU
Lamb's Quarters	49 ++
Kochia	≤10 NEG
Russian Thistle	≤10 NEG
Saltbush, Annual	≤10 NEG
Ragweed Mix (Short, Tall)	≤10 NEG
Ragweed, False	27 ++
Ragweed, Southern	≤10 NEG
Ragweed, Western	498 +++
Sage, Mugwort Mix	16 +
Cocklebur	75 +++
Marsh Elder, Burweed	≤10 NEG
Marsh Elder, Rough	103 +++
Goldenrod	≤10 NEG
Dog Fennel	≤10 NEG
Sorrel, Dock Mix	271 +++
English Plantain	43 ++
Pigweed Mix	≤10 NEG
Nettle	≤10 NEG

Trees	HERBU
Maple, Box Elder Mix	≤10 NEG
Oak Mix	≤10 NEG
Beech	≤10 NEG
Mulberry	≤10 NEG
Hickory	≤10 NEG
Pecan	≤10 NEG
Walnut, Black	≤10 NEG
Walnut, California Black	≤10 NEG
Willow	≤10 NEG
Aspen	34 ++
Cottonwood	103 +++
Ash, American	18 +
Ash, Arizona	37 ++
Olive	≤10 NEG
Privet	≤10 NEG
Cedar	34 ++
Cypress, Arizona	≤10 NEG
Cypress, Bald	≤10 NEG
Elm Mix	26 ++
Alder	50 ++
Birch Mix	≤10 NEG
Hazelnut	17 +
Sycamore	≤10 NEG
Acacia	21 +
Mesquite	≤10 NEG
Sweetgum	≤10 NEG
Bayberry	≤10 NEG
Pepper Tree	≤10 NEG
Pine Mix	≤10 NEG
Palm, Queen	≤10 NEG
Eucalyptus	≤10 NEG
Melaleuca	≤10 NEG
Pine, Australian	≤10 NEG

For diagnostic interpretation, case consultation, and immunotherapy orders, veterinary professionals please call 1-800 GO HESKA (1-800-464-3752) option 5, or email HeskAllergy@heska.com. **Technologist: CALDERM**

Sample IgE Test Results Continued



HESKA® Veterinary Diagnostic Laboratories

3760 Rocky Mountain Avenue
Loveland, CO 80538

Account #: 434808
Veterinarian: Jones
Clinic: FRIENDLY PAWS ANIMAL CLINIC
Address: 123 FIRST STREET
City/St/Zip: FORT COLLINS, CO 80525
Clinic Phone: (970) 493-7272 **Fax:** (970) 619-3009
Owner Name: Cooper, Sheldon
Patient Name: Olivia **Sex:** F **ID:** 4000002
Species: CANINE **Breed:** IRISH SETTER **Birth Yr:** 2011

Accession: 14100001 **Collected:** 06/05/2000 02/10/14 **Received:** 02/12/14 **Reported:** 06/10/2000 02/13/14

Mites	HERBU
Dermatophagoides farinae dust mite	122 +++
Dermatophagoides pteronyssinus dust mite	34 ++
Tyrophagus storage mite	168 +++
Acarus siro storage mite	≤10 NEG
Lepidoglyphus storage mite	≤10 NEG
Biomia tropicalis mite	≤10 NEG

Insects	HERBU
Flea	16 +
Cockroach Mix	≤10 NEG
Mosquito	≤10 NEG

Epithelials	HERBU
Cat	53 +++
Feather Mix	121 +++

Fungi	HERBU
Malassezia	55 +++
Fusarium	≤10 NEG
Aspergillus	51 +++
Penicillium	298 +++
Cladosporium	≤10 NEG
Alternaria	≤10 NEG
Drechslera	≤10 NEG
Grain Smut Mix	24 +

HERBU		
≤10	Negative	No allergen-specific IgE detected.
11 to 25	+	Allergen-specific IgE detected. Allergens in this category should be considered for immunotherapy if exposure is consistent with patient history.
26 to 50	++	High levels of allergen-specific IgE detected. Allergens in this category should be considered for immunotherapy if exposure is consistent with patient history.
51 to >600	+++	Very high levels of allergen-specific IgE detected. Allergens in this category should be strongly considered for immunotherapy if exposure is consistent with patient history.

For diagnostic interpretation, case consultation, and immunotherapy orders, veterinary professionals please call 1-800 GO HESKA (1-800-464-3752) option 5, or email HeskaAllergy@heska.com. **Technologist: CALDERM**

Sample Immunotherapy Recommendations



HESKA® Veterinary Diagnostic Laboratories
3760 Rocky Mountain Avenue
Loveland, CO 80538

Account #: 434808
Veterinarian: Jones
Clinic: FRIENDLY PAWS ANIMAL CLINIC
Address: 123 FIRST STREET
City/ST/Zip: FORT COLLINS, CO 80525
Clinic Phone: (970) 493-7272 **Fax:** (970) 619-3009
Owner Name: Cooper, Sheldon
Patient Name: Olivia **Sex:** F **ID:** 4000002
Species: CANINE **Breed:** IRISH SETTER **Birth Yr:** 2011

Accession: 14100001 **Collected:** 02/10/14 **Received:** 02/12/14 **Reported:** 02/13/14

Immunotherapy Recommendations

June grass (Kentucky Blue)
Johnson grass
Lamb's Quarters
Ragweed, Western
Sorrel, Dock Mix
English Plantain
Cottonwood
Cedar
Elm Mix
Dermatophagoideis farinae dust mite
Dermatophagoideis pteronyssinus dust mite
Tyrophagus storage mite

Heska offers two immunotherapy treatment options for your patients
ALLERCEPT® Therapy Drops (sublingual application)
ALLERCEPT® Therapy Shots (subcutaneous injection)

Based on ALLERCEPT test results, immunotherapy recommendations were made for Olivia Cooper.

Allergen choice was based on:

- **botanical zone** using clinic zip code
- **number, distribution, and strength of IgE reactivity**
- **allergen cross-reactivity**
- **seasonality**, if described in Olivia's history
- **pollens of allergenic importance**

As Olivia's veterinarian, please consider modification to these IgE test results-based immunotherapy recommendations to accommodate factors specific to Olivia's history and/or environment.

The final composition of the treatment set contents will be determined by you at the time the order is placed.

For free diagnostic interpretation and/or case consultation, or to place an immunotherapy order, veterinary professionals please contact Heska's Medical and Technical Consultation specialists at 1-800-GO HESKA (1-800-464-3752) option 5, or HeskaAllergy@heska.com

For diagnostic interpretation, case consultation, and immunotherapy orders, veterinary professionals please call 1-800 GO HESKA (1-800-464-3752) option 5, or email HeskaAllergy@heska.com. **Technologist: MTC**

Sample Immunotherapy Recommendations continued



HESKA® Veterinary Diagnostic Laboratories
3760 Rocky Mountain Avenue
Loveland, CO 80538

Account #: 434808
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Clinic: FRIENDLY PAWS ANIMAL CLINIC
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City/ST/Zip: FORT COLLINS, CO 80525
Clinic Phone: (970) 493-7272 **Fax:** (970) 619-3009
Owner Name: Cooper, Sheldon
Patient Name: Olivia **Sex:** F **ID:** 4000002
Species: CANINE **Breed:** IRISH SETTER **Birth Yr:** 2011

Accession: 14100001 **Collected:** 02/10/14 **Received:** 02/12/14 **Reported:** 02/13/14

NUMBER OF ALLERGENS

The recommended maximum number of allergens in a single treatment set is 12; however,

- Up to 20 allergens can be included in Allercept Therapy Drops (additional charges apply).
- Up to 14 allergens can be included in a one vial formulation of Allercept Therapy Shots (additional charges apply).
- For patients with reactivity to **more than 14 non-cross reactive allergens**, or for patients with **mold* sensitivities**, **two formulations of Therapy Shots** can be ordered.

DUST MITES

Olivia has allergen-specific IgE to house dust mites. Dust mites are common and can be highly allergenic. Some patients are treated exclusively for these environmental allergens.

STORAGE MITES

Olivia has allergen-specific IgE to storage mites. Storage mites may be found in house dust and in stored products (e.g. flour, grains, cheese, seeds, straw, cereals, pet foods).

FLEA

Olivia has allergen-specific IgE to flea salivary antigens. Currently, the **best treatment for flea allergy dermatitis is to completely eliminate flea exposure** by treating all pets, the house, and premises.

CAT

Olivia has allergen-specific IgE to cat allergens. Exposure may occur from a cat in the house or neighborhood, from a cat previously in the residence, or from cat dander on people's clothing. If the cat positive score correlates with clinical presentation and exposure, consider adding cat allergens to the immunotherapy treatment composition.

MOLDS*

Olivia has allergen-specific IgE to molds(s). Identification of the mold source and remediation should be considered. If the mold positive score(s) correlate with clinical presentation and avoidance is not an option, consider adding mold allergens to the immunotherapy treatment composition.

* **Therapy Drops** - molds can be mixed in the sublingual formulation without any negative effect, so **molds can be combined with other allergens in one order when using sublingual immunotherapy.**

* **Therapy Shots** - mold proteolytic enzymes can degrade other allergens in the subcutaneous formulation; therefore, a **separate order for molds is recommended when using injectable immunotherapy.**

For diagnostic interpretation, case consultation, and immunotherapy orders, veterinary professionals please call 1-800 GO HESKA (1-800-464-3752) option 5, or email HeskaAllergy@heska.com.

Technologist: MTC

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Immunotherapy Recommendations

v6.0

Immunotherapy Guidelines

Every pet's allergy condition is unique. Regular re-evaluations with the veterinarian, especially during the first year of treatment, are essential for achieving the best results. The goal of treatment is to control the patient's allergic signs. Some animals may have full resolution of their condition after an extended period of time, while others may still require the use of other treatments, like antihistamines, shampoos, essential fatty acids, anti-inflammatory drugs, or even immunosuppressive drugs to provide the best control. The decision to continue immunotherapy should be made after careful review of the patient's history and once all other underlying conditions have been treated and ruled out. Heska's Medical group is available to discuss cases at any time before or during treatment.

Subcutaneous Immunotherapy

Because each patient will respond differently to treatment, the dose and interval between the allergy injections in pets with atopic dermatitis should be tailored according to the animal's response. The initial series of injections are given at 4-day intervals. The intervals are gradually increased based on the pet's response. See the suggested guidelines in the table below.

The final injection interval is determined by the period that provides the best control of the patient's clinical signs, which will typically be between 1 and 4 weeks.

It is recommended that the first 11 injections be given in the clinic. Thereafter, if giving the injections at home, the owners should keep a record of date, dose and the pet's response to all of the injections.

Start with an initial series of injections from Vial #1 (a lower concentration of allergens) and then Vial #2 (higher concentration of allergens). Most patients are maintained on 1cc from Vial #2 (same as Maintenance Vial when refills are ordered); however, patients that have reactions to higher doses often can achieve good control over their signs on lower doses. Contact Heska's Medical and Technical Support Services to discuss any reactions and adjustments in dose or schedule.

Below are the suggested injection volumes and intervals for both Vial #1 and Vial #2.

VIAL #1 INITIAL SERIES			
Injection #	Injection Interval	Date Given:	Treatment Volume (ml)
1	—		0.1
2	4 Days		0.2
3	4 Days		0.4
4	4 Days		0.8
5	4 Days		1.0
VIAL #2 MAINTENANCE SERIES			
Injection #	Injection Interval	Date Given:	Treatment Volume (ml)
6	4 Days		0.2
7	4 Days		0.4
8	4 Days		0.6
9	4 Days		0.8
10	4 Days		1.0
11	7 Days		1.0
12	7 Days		1.0
12+	Based on Patient's Response*		1.0
<p>*Once the maintenance dose is reached, continue a weekly injection interval until there is significant improvement in the patient's allergic signs. The interval can then be increased gradually (2 weeks for several injections, then 3 weeks and possibly 4 weeks). The final injection interval is determined by the time period that provides the best control and will fall between 1 and 4 weeks.</p>			

Sublingual Immunotherapy

Three bottle sequence: The drops come in 3 formulations (A, B and C). The first prescription will contain two bottles, labeled "A" and "B". Begin treatment with bottle "A". Once completed, begin bottle "B". The second prescription order as well as subsequent refills will contain two bottles of "C". After bottle "B" is used, begin bottle "C" and continue with this for the duration of treatment.

Sublingual immunotherapy is administered twice daily, usually once in the morning and once in the evening. Two pumps from the dispenser are easily given sublingually via the specially designed pump. Most animals find the taste to be highly palatable. No food, treats or water should be given with the dose, and nothing else should be given orally

for 10 minutes following dosing to allow the drops to remain in the mouth for as long as possible. If a dose is missed, the owner does not need to try to “catch up” by giving additional doses at the same time, as this may cause a reaction. Treatment should just be continued according to the next scheduled dose. Each bottle lasts approximately 75 days, so one treatment set will last about 5 months.

In general, the twice daily dosing schedule remains the same for all patients, for the duration of treatment. Adjustments might be made if any adverse reactions are observed, although these are rare with sublingual immunotherapy. Contact Heska’s Veterinary Medical and Technical Consultants to discuss any reactions to treatment.

ENVIRONMENT—CONTROLLING EXPOSURE



In addition to immunotherapy, minimizing your patient's exposure to environmental allergens identified by positive reaction in ALLERCEPT IgE testing may be helpful in managing clinical signs. It is impossible to avoid and/or eliminate all allergens from the environment. Some suggestions are provided, but nothing can address the underlying problem better than immunotherapy.

HOUSE DUST MITES

House dust mites (*Dermatophagoides* species) are common in the environment and feed on human and animal dander, skin scales and hair. They thrive in humidity of 50–70% and are commonly found in beds, mattresses, carpets, sofas and pet bedding. Elimination is impossible; control measures are aimed at inhibiting mite multiplication. Ideally, the entire household is incorporated in an environmental control program. If this is not possible, at a minimum, pet sleeping areas should be maintained according to the following guidelines:

- Wash bedding (human and pet) and soft dog toys weekly in HOT (130°F) water. Dry on full heat for at least 20 minutes.
- Avoid feather and wool bedding, use allergen-proof bed covers and encase box springs in vinyl or plastic covers.
- Minimize clutter where dust can collect.
- Change furnace and air conditioning filters regularly. If possible, use filters made for allergen control.
- Vacuum and dust regularly, preferably while pet is outdoors. Use a vacuum with a high efficiency particulate air (HEPA) filter or a double-layered micro filter bag.
- Use a damp or oiled rag to dust rather than dry dusting, which can stir up mite particles.
- Groom animal regularly.

STORAGE MITES

Tyrophagus putrescentiae is a grain storage mite and may be referred to as the mold mite. Storage mites thrive in environments where there is moisture or increased humidity. They can be found in dry food items, such as flour, grains, dried fruits and cereal and may also occur in dry dog and cat food. Dry pet food does contain some level of moisture (less than 10%), which can create an environment that promotes storage mite growth; however, additional studies are needed to more thoroughly document this.

Pets exposed to this mite through ingestion, inhalation or absorption through the skin may develop an allergy to it, and immunotherapy can be effective in reducing clinical signs. In addition, environmental control may be useful in decreasing exposure to storage mites. Although it is impossible to eliminate mites from the environment, the following steps may help control the population:

- Do not stockpile food; purchase only what is needed to maintain a 30-day supply.
- Prior to purchase, check the food bag for tears or holes.
- Store pet foods in airtight containers in a cool, dry environment.

- Divide the bag of pet food into one-week portions and place in freezer safe storage containers. Keep the containers of food in a freezer until needed.
- Wash food storage containers frequently with detergent and HOT water. Dry completely before refilling with food.
- Clean pet food bowls daily with detergent and HOT water. Dry completely before filling with food.
- Same control measures may be used for pet treats.

FLEAS

Fleas are one of the most common causes of itchy skin in pets. Fleas can cause itching in the following ways:

- Their physical presence causes scratching, biting and self-trauma, which develops into a perpetual cycle.
- Hypersensitivity, or allergy, to flea saliva injected when fleas bite.



Pets with hypersensitivity to fleas may develop flea allergy dermatitis (FAD), an extremely itchy disease which predisposes them to secondary bacterial and/or yeast skin infections. FAD should be considered a progressive disease; each flea season results in an increasingly severe reaction. A well-planned flea control strategy targeted towards all stages of the flea life cycle is essential for these patients.

An effective flea control program must involve the entire household, and all animals in contact with the affected pet. The goal is to eliminate fleas from the pet and the environment and prevent re-infestation. The following are recommendations for the house, the yard and the pet:

The House

- Frequently vacuum and mop all floors (dispose of vacuum bag outside of the home).
- Wash kennel floors and pet bedding.

The Yard

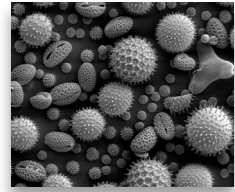
- Block off access to crawl spaces and treat with insecticides.
- Consider commercial extermination and outdoor spraying.

Your Pet

- Talk with your veterinarian about topical and oral flea control products.

POLLEN ALLERGENS

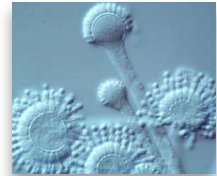
Pollens from grasses, trees and weeds can be carried great distances by air currents. Pollen exposure most often occurs through inhalation of airborne particles and/or absorption through the skin. Avoidance is impractical, but exposure can be minimized.



- If possible, limit exposure to certain conditions and times of day, such as during high pollen counts, windy days, high humidity and early morning or evening hours.
- Vacuum and dust regularly.
- Use air conditioning instead of opening windows.
- Keep pet off of lawn for 1–2 hours after mowing.
- Bathe pet regularly with hypoallergenic shampoos, leave-in conditioners that soothe skin and cool water rinses to decrease pollen accumulation.
- Dry bedding in dryer instead of hanging outside.

COMMON FUNGI/MOLDS

Molds are a type of fungus found indoors and outdoors in moist organic materials. Included in this group are rusts, smuts, mushrooms, toadstools, yeast and slime molds.



Outdoor Spore Levels

Outdoor spore levels vary throughout the day and year. Because levels are often higher near the ground, lawn mowing and grain harvesting result in increased dispersion of mold/fungal particles. Mold allergic animals may develop clinical signs following exposure to leaf litter, peat moss, mulches, soil and rotting logs.

Indoor Mold Levels

Indoor mold levels are commonly elevated when indoor air quality is poor (*i.e.*, the house is closed off to fresh, outside air). Common locations for mold growth include bathrooms, laundry rooms, basements and closets. Specific equipment can also be contaminated; these include cool mist vaporizers, furnace humidifiers, air conditioners and swamp coolers.

Indoor Mold Control

Indoor mold control involves general cleanliness, reducing excessive indoor moisture (relative humidity less than 50%), and identification and remediation of known mold sources.

COMMON MOLDS AND THEIR LOCATIONS

Principle outdoor, minor indoor – *Alternaria*, *Fusarium* and *Cladosporium*

Principle indoor, minor outdoor – *Aspergillus* and *Penicillium*

Minor outdoor and minor indoor – *Dreschleria*

Ask your veterinarian for more tips on managing allergies based on your pet's history, location and test results.

For questions or further assistance, please call Heska's Veterinary Medical and Technical Consultants at [800.464.3752](tel:800.464.3752), option 5.



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